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## Recycling in Europe, the Future of Raw Materials



**THE NEW PLASTICS ECONOMY**  
RETHINKING THE FUTURE OF PLASTICS

## EDITORIAL

# Recycling in Europe, the Future of Raw Materials

**R**ecycling in Europe? Momentum is building around the Circular Economy. The objective is to increase resource efficiency while reducing waste and pollution, including through ecological design. Last December, the European Commission introduced a Circular Economy package to promote this transition. The package consists in an Action Plan and timeline complemented by Directives for the European Union (EU). The principles of this package are deeply rooted in a need to strengthen the European Union's efficiency and resilience in an increasingly dynamic world economy. This is presented as the natural result of a discourse set by the Commission in 2012 with the publication of *Manifesto for a Resource Efficient Europe*. An economic model works best when it benefits all actors involved; through this action plan, the EU must also strive for an economy that provides secure jobs for its citizens. This is also an opportunity to lead the international community in the commitments made towards achieving the goals set by the COP21.

This issue of *The European Files* provides an insight into the major proponents driving the Circular Economy. Central to the EU's vision is its ability to push legislation for a more transparent, effective and standardized approach to recycling. Policy makers must work hand-in-hand with enterprises to design frameworks that transcend market failures into opportunities. The priority is to reduce waste but also the water and energy footprints, however reusing, recovering and recycling should accommodate a growing and pioneering economy. The Commission's legislative

actions, show a move in the right direction. They should not fail to adequately encourage resource management, biowaste management, and sewer water recycling. No economic "loop" will be completed if dangerous materials are not properly taken care of; the EU must clarify its standards for the treatment of toxic waste. Biowaste management should be promoted where it makes sense from an environmental and economic perspective. The recycling of treated waste water and sewage sludge must be promoted and minimum quality standards set with regard to the destination of the reused product. There are already very positive examples of economic viable green local loops through Europe and high performing regions with regard to resource efficiency, however the discrepancies within Europe regarding recycling are striking. Behavior and economical changes will require a more demanding and harmonized continental scheme with targeted incentives. The strongest top-down market mechanism for change is the Commission's ability to finance pioneers in eco-design, innovation in waste management and to trigger drivers to develop markets for recycled material. Sustainable finance should support sustainable industries such as recycling. Extracting extra value from waste, or rather adding value back into the economy is a critical objective of these successful campaigns.

Policymaking must listen to the voice of NGOs, local authorities, companies and researchers, as on the ground actors of the circular economy. This will ensure that the policies evaluated are well designed and

aligned with future market opportunities—this is especially true for raw resource of heavy industries such as construction. Forethought into the design of products is equally important to the waste management systems developed. Together, the EU could create entirely new industries of maintenance and repair, both high-quality service industries, while also promoting an industry of goods sharing. This is in addition to a Secondary Raw Materials market that would help reduce Europe's dependence on raw resource imports as the economy transitions into a more self-sufficient one.

The Circular Economy package clearly envisions a stronger and more secure market for its citizens. As more evidence mounts on the unsustainable and costly maintenance of the current "take, make, dispose" model of production, a European vision for a Circular Economy should be central to the wellbeing of its citizens.

**LAURENT ULMANN**

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# The Circular Economy package



**Karmenu VELLA**

*European Commissioner for the Environment, Maritime Affairs and Fisheries*

There is a new way of thinking, known as the circular economy, which means that products are designed and produced to be used for as long as possible, easily repaired and, once they reach the end of their lives, recycled or disposed of effectively. It's about incorporating sustainability into products from the outset, and changing existing business models.

In the EU, we consider the circular economy to be a triple win - a win for growth, a win for jobs, and a win for the environment. We can capitalize upon this triple win if we act coherently along the whole value chain. Studies show that a shift towards a circular economy could bring savings of €600bn for EU businesses, and reduce greenhouse gas emissions by 2 to 4% every year. There is also significant employment potential with low, medium and high-skill jobs in eco-design, engineering, waste sorting and recycling, and in new services based on renting or sharing products. A circular economy promotes innovative technologies that give European companies a competitive edge, and it benefits consumers, who enjoy more durable and innovative products.

The European Commission adopted an ambitious Circular Economy Package last year. The strategy covers all stages of our economic model, from conception and design to manufacturing and consumption, through

to recycling and back to production. Thus avoiding waste even before managing it. It contains legislative proposals and a set of 54 actions. Most of them are enabling measures to help, accompany and accelerate the change we see in the private sector.

On waste management, we propose ambitious, but realistic binding targets for recycling and landfilling in the EU, up to 2030. This long term vision will give business the long-term perspective and legal certainty needed for investment. It will improve security of supply, and develop the markets for secondary raw materials.

Other tangible measures include new rules for fertilisers, making it easier for manufacturers to re-use biomass that was previously disposed of as waste. This will open up Europe's single market to organic and waste-based fertilisers.

At the design stage, the Eco-design Directive (and other product policies) will continue to promote energy savings. It will also ensure that products are more durable, recyclable, and easier to repair. Public procurement accounts for a large share of European consumption. We intend to strengthen Green Public Procurement criteria to encourage buying durable and repairable products. We know green procurement works with a combination of 3 elements: clear rules, dedicated public authorities, and trained staff.

Innovation of course will also play a key part. Our initiative on 'Industry 2020 in the Circular Economy' will provide project funding of over € 650 million. Cohesion funds help develop top scale waste infrastructure with a dedicated budget of € 5.5 billion. And of course the European Fund for Strategic Investment, EFSI.

Access to finance can be difficult for companies applying innovative, circular economy solutions because of a lack of understanding of the new business models driving them. Projects can be too risky or too long-term for traditional investors.

EFSI addresses precisely this element. It has an overall target to mobilise investment of at least € 315 billion in Europe over three years, with an estimated € 115.7 billion of investment

already triggered by July 2016, one year after it started. President Juncker announced a doubling of the fund with an objective to reach € 500 billion leveraged investments by 2020. EFSI investments will help raise private finance, especially in areas where commercial banking is hesitant to get involved. The fund, which has been developed in close partnership with the European Investment Bank (EIB), brings together public and private financing and can provide help for small scale circular economy projects and support innovative projects that lack funding.

Investing in the development of the circular economy is a high priority for me and for the European Commission as a whole. With the Circular Economy Package we have put forward an ambitious and comprehensive set of proposals, but there is still much to be done before we can declare our economy fully "circular". The Commission has some powerful levers, but we cannot transform the EU economy on our own. It will take a joint effort from a great number of players – and from businesses that are willing to spread the word, and to practice what they preach.

# Waste as resource: an unavoidable choice



**Simona BONAFÉ**

MEP (S&D, ENVI), *Rapporteur on the revision of the Waste directives/Circular Economy package*

The current linear development model, which may be summarised as ‘take, produce, consume and dispose of’, is beginning to show signs of reaching its limits. Our planet is warming, and the resources used, on which we depend, are becoming increasingly scarce. Unless structural measures are taken, demand for raw materials by the world economy could increase by a further 50% in the next 15 years. In order to reverse this trend, we must adopt a circular development model which keeps materials and their value in circulation within the economic system for as long as possible, by optimising the integrated waste cycle in order to put resources to efficient use. Re-use, recycling and recovery are becoming the key words around which a new paradigm needs to be built to promote sustainability, innovation and competitiveness, so that waste will cease to be a problem and become a resource.

An industrial transition towards a well-functioning economic system where materials are sustainably sourced, reused and recycled in order to limit the amount of virgin raw materials ‘entering’ the cycle, as well as the end of life waste ‘leaving’ the cycle is essential. At the European level, already a 30% improvement in resource productivity by 2030 would deliver an increase in GDP of almost 1% by 2030, create more than 2 million additional jobs and put us on track to a more resource

efficient Europe profiting from related ecological, economic and social benefits

The new circular economy package shall therefore be viewed in a far broader context than that of a mere review of waste legislation but a crucial instrument for preserving the environment, making the European economy more competitive and promoting sustainable reindustrialisation.

Increasing the value of resources means intervening in all phases of the product life cycle: from extraction of raw materials to product design and from distribution, through consumption, to the end of life of products.

A clear and stable legislative framework is the first step in promoting the transition.

Such a systemic change calls for ambitious policies, backed by legislation capable of sending the right signals to investors. If European legislation fails to incorporate clear definitions and binding targets, it could impede progress towards the circular economy.

Taking the waste hierarchy as a basis, European legislator shall hinge around two main objectives: strengthening of waste prevention measures and channelling waste back into the production process.

In order to reduce the quantity of waste, it is necessary to launch upstream the innovation of production processes and business models on which the circular economy has to be based.

The implementation by Member States of preventive measures throughout a product’s useful lifecycle is the most effective way to improve resource efficiency and to reduce the environmental impact of waste, by promoting durable, recyclable and reusable materials by means of suitable economic instruments. The introduction of EPR schemes at national level for various products has proved to be an effective tool for optimising waste management costs and the possibility of reducing end-of-life costs for products can be used as an incentive for the design of products that can be re-used or recycled. Finally It is necessary to take measures in line with Agenda 2030 for Sustainable Development in respect of major environmental and ethical issues, so as

to reduce food waste and marine litter by 50% by 2030.

Ambitious targets in respect of the preparing for re-use and recycling of municipal waste can help ensure that waste with high economic value is recovered and recycled as quality secondary raw material

At the same time separate waste collection systems for different kinds of waste is the prerequisite for creating a high-quality recycling market and attaining the targets set. The current provision for exemptions on technical, environmental and economic grounds have in practice led to this requirement not being fully applied.

At the same time, Member States shall use economic and regulatory instruments to ensure fair competition between virgin raw materials and secondary raw materials.

The transformation of the Union into a green, low-carbon economy which uses resources efficiently is already one of the main objectives of the Seventh European Environmental Action Programme, and it is worth recalling that Europe has committed itself to attaining the UN’s sustainable development targets.

Accelerating the transition towards a circular economy model is not an option, but a mandatory choice. While we have to face the striking effects - even economically - of climate change with increasing global competition for lacking resources, we can’t pass this opportunity.

Combining economic and industrial development with sustainability is an evolving process that we cannot suffer, but a challenge we have to take on and facilitate with a far-sighted and pragmatic legislative framework.

# Ambition and realism – key ingredients for a future-oriented waste policy



**Daniel CALLEJA CRESPO**

*DG ENVI, European Commission*

A circular economy responds to the main challenges of our time. Maintaining the value of products and materials in the economy through reuse and recycling and reducing waste can help our economy to become more competitive and resilient, relieve the pressure on our resources and environment, create jobs and social cohesion, and spur innovation. Moving away from a linear economy is the only solution that makes sense in the long-term for the European economy.

The Circular economy Package adopted by the European Commission in December 2015 is a key contribution to that transition, to the 10 priorities of President Juncker and to the broader agenda of the European Union for jobs and growth. It is also closely linked with the energy and climate policies, at the time of global commitments on climate change, and it contributes to the implementation of the Agenda 2030 on sustainable development adopted by the United Nations in September 2015.

The waste legislative package, which was adopted by the European Commission in December 2015, aims to make waste management a true part of the clockwork of the circular economy. The targets proposed in order to turn waste into a resource are necessarily demanding. They help to ensure that resources stay 'within the loop' and are available for future use thus creating a viable market for secondary raw materials and new business opportunities.

Ambition is an essential ingredient of success. Progress is achieved only by setting the bar each time higher. The Commission is proposing a policy for the future with long-term targets for better waste performance to be achieved within the next 10-15 years. This is not just an environmental agenda: it is fundamentally about tapping into new sources of growth and job creation, broadening our internal market and giving a boost to our competitiveness.

Realism is about being able to see the situation as it is, while keeping strong determination to move forward. This is exactly what the Commission proposals do. They build on a mature EU policy framework that has supported continuous advancement on waste management, has led to the establishment of a viable waste management sector and has given a boost to innovation in this field. But if Europe is serious about the transition to a circular economy and keeping a leading position in environmental technologies globally, there is no room for complacency.

Nowadays, only a limited share of all the 2.5 billion tonnes of waste generated in the EU is recycled. 1.6 billion tons are not put effectively back in the European economy, while it is estimated that an additional 600 million tons could be recycled or reused. Major improvements are within reach as regards the recycling of municipal waste, half of which is still incinerated or landfilled, as well as of packaging waste and waste prevention.

To fundamentally improve waste management practices we need EU waste legislation. The waste legislative proposals put forward a clear and stable policy framework, allowing public and private actors across the EU to develop long-term investment strategies focusing on waste prevention, re-use and recycling. The Commission proposes increasing the recycling of municipal waste to 65%, the recycling of packaging waste to 75% with specific targets per packaging waste stream, and limiting landfilling of municipal waste to 10% - all to be achieved by 2030. Adding to an existing obligation as regards paper, glass, metals and plastics, separate collection of bio-waste is also introduced in order to ensure the quality of waste streams for recycling.

To achieve these ambitions the use of market mechanisms is prioritised. The proposals include minimum requirements for extended producer responsibility schemes and emphasise the use of economic instruments such as landfilling or incineration taxes.

Better regulation is also essential – therefore definitions are aligned and provisions on 'by-products' and 'end-of-waste' status are clarified in order to facilitate industrial symbiosis and boost secondary materials markets. The proposed calculation rules get as close as possible to measuring actual recycling rates and therefore real circularity in the economy.

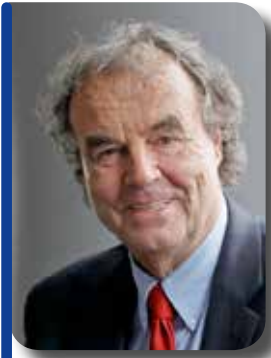
Our waste proposals are based on a comprehensive assessment of where the EU and individual Member States stand, and what can be done to improve current performance. Differences today are considerable, with a number of countries recycling below 20% of municipal waste and landfilling more than 65%, while others recycle above 50% and landfill below 5%. The objective is to achieve gradual convergence to best-practice levels, while allowing more time for those countries that would need it most. Efforts to close today's waste management gaps are already supported by EU funding, with 5.5 billion euros available under the cohesion policy in the period up to 2020. The policies, technologies, and good practices are all there to tap into the potential of improved waste management and the Commission actively supports Member States' efforts with analysis, recommendations and exchange of good practice.

Achieving the proposed targets comes with a benefit – it is estimated that in addition to the nearly 400 000 direct jobs brought by the implementation of the existing EU waste legislation, 170 000 more jobs could be created, most of them impossible to delocalise outside the EU, and 30 billion euro saved by 2035. Agreeing to take the path to maximise recycling is particularly important for those countries that joined the EU recently and are currently building their waste management system. They have also the most to gain in terms of jobs and savings.

The waste package presents concrete measures on smart regulation, market-based instruments, innovation and incentives. It is a clear signal to economic operators that the Commission is committed to creating new business opportunities and innovation by boosting the market for secondary raw materials. While it is driven by ambition, it is also underpinned by thorough analysis and a realistic approach to turn waste into a resource. If swiftly adopted, embraced by all stakeholders and effectively implemented, this package will bring the circular economy much closer to becoming an everyday reality.



# Time for change



**Karl-Heinz FLORENZ**

MEP (EPP, ENVI), Shadow Rapporteur on the revision of the Waste directives/Circular Economy Package

What would be the consequence ...

- › if the global population rose every year by the size of France?
- › if imports of resources amounted to 20 percent of GDP?
- › if the prices for certain resources increased by a factor of 28?
- › if you are dependent on these resources?

We would be in a serious situation in Europe; and our industry in particular. ... and what if all this is actually already true?

Let's have a closer look at the challenges Europe is facing. There will be almost 10 billion people on our planet by 2050. Even more important, the "middle-class" will increase from nearly two billion to five billion people by 2030. This is a massive driver of resource consumption. Europe will be most affected as our continent is poor in resources and at the same time the largest net-importer of such resources world-wide. We imported resources worth EUR 704 billion in 2013 alone! And many of the most scarce materials such as rare earths come from just a few rather unstable countries. This makes Europe very dependent on those countries and puts the security of supply at risk. And 97 per cent of the so-called critical minerals indispensable for high-end products originate from China. Furthermore, prices have been dramatically increasing since 2000. For example, the price for Neodyma, a high-tech metal used for

magnets and off-shore wind power stations, increased from 25,000 dollars per ton in 2000 to 700,000 dollars in 2012.

These facts make it obvious that we have to deal differently with our resources: we have to use them more efficiently. With their sustainable use we address, at the same time, environmental, climate and economic objectives. The study "Growth Within" from the Ellen McArthur foundation concluded that a change towards a circular economy model would create net benefits of 1.8 billion by 2030, twice the benefits of the current path, and an increase of household income as well as a massive reduction of GHG. We could save up to 244 Million tons of greenhouse gas emissions simply by proper management of waste according to the "waste hierarchy", favouring reduction, re-use and recycling, and avoiding landfill.

But in order to achieve these benefits we have to change! We have to question our old ways of thinking and behaving. This includes allowing new business models to develop. One example is the replacement of products by services: for example Philips is offering to sell light instead of light bulbs. Producers therefore become service providers and find it is in their interests – and those of their customers – to develop longer lasting products. The end result is more efficient products, cost savings and less waste.

Even the most durable products will one day reach the end of their useful life. But instead of considering such waste as a problem, to be buried in landfill or burned in incinerators, we have the opportunity to recognise its value as secondary raw material and bring its value back into the life-cycle. Recycling brings on tap further badly-needed raw materials. Developing such "urban mines" in Europe can considerably reduce Europe's dependence on external sources and reduce our vulnerability to price volatility. It is maybe not surprising then that the recycling sector has developed into a successful business. In Germany its turnover increased by 520 per cent between 2005 and 2009. The good news is the recycling rates of municipal waste in Europe are increasing. The latest data shows in 15 Member States the rate of recycling in November 2016 was at least 10 percentage points higher than ten years ago (European Environment Agency). Yet, in a couple of Member States the rate did not increase or even dropped.

The picture for critical raw materials is less good: indeed they are hardly being recycled at all, for most of them the recycling quota is below one per cent! They are considered as critical when they are under risk of supply shortage and their impacts on the economy are higher compared with most of the other raw materials. Cars, mobile phones, buildings, beverage containers and books are just few everyday life examples of their application. But high levels of critical and other valuable materials go straight into the bin and end up in the incinerator or in a landfill; even if technologies are improving to extract them.

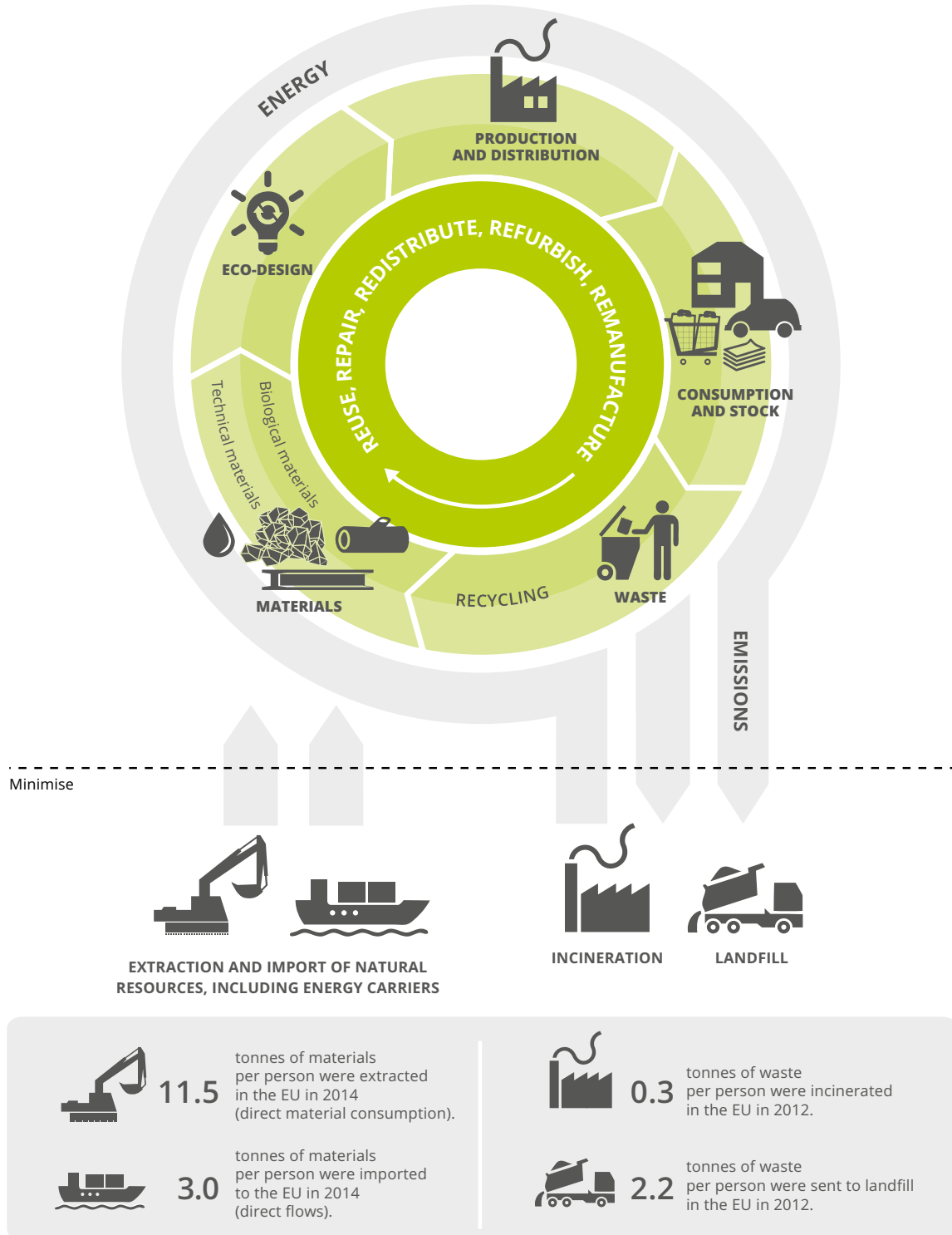
The facts are on the table and the future scenario is pretty clear but still the reaction would need to speed up, for example there is still a lack of demand for secondary raw materials in comparison to the demand for primary materials. The reasons are diverse. The OECD talks about "multiple market-failure". That is why we need intelligent legislation, a mix of policies and concerted action between the different government departments. Clear guidance and predictability must be provided for decision takers and investors. And there is an urgent need to revise the current EU legislation in the field. Even if every piece of existing EU waste legislation was fully implemented, we would still lose too many valuable resources.

In the revision of the EU waste directive it is fundamentally important not only to continue and enhance binding recycling targets, but also to make sure that we get figures that show us reliably how much waste we recycle and not only how much we collect – as currently the case in a few Member States. Even the most ardent collecting of potentially recyclable material is no guarantee that the recycling actually takes place, nor does it give any information on the secondary raw material made available. This means establishing a clear definition of recycling. Today EU Member States have far too much discretion to decide what counts as recycling. We need clarity as for the measuring method and the point of measurement. Only such criteria will pave the way for real comparability and make the ambition level itself credible.

There is still a lot of work ahead of us for all phases of the lifecycle of products in order to make sure that resources are kept as long as possible in the production chain. This requires efforts from everyone: political will, business innovation and consumer awareness.

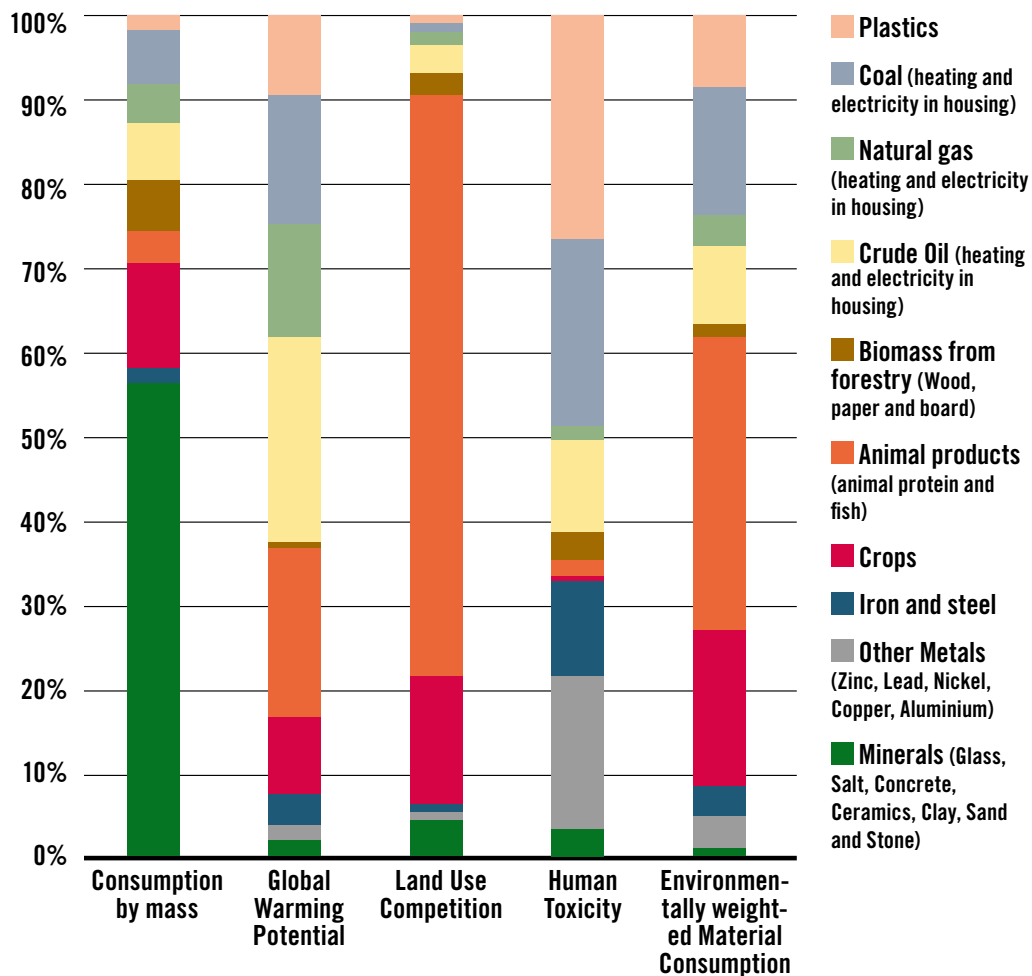
The circular economy and its benefits

A simplified model of the circular economy for materials and energy

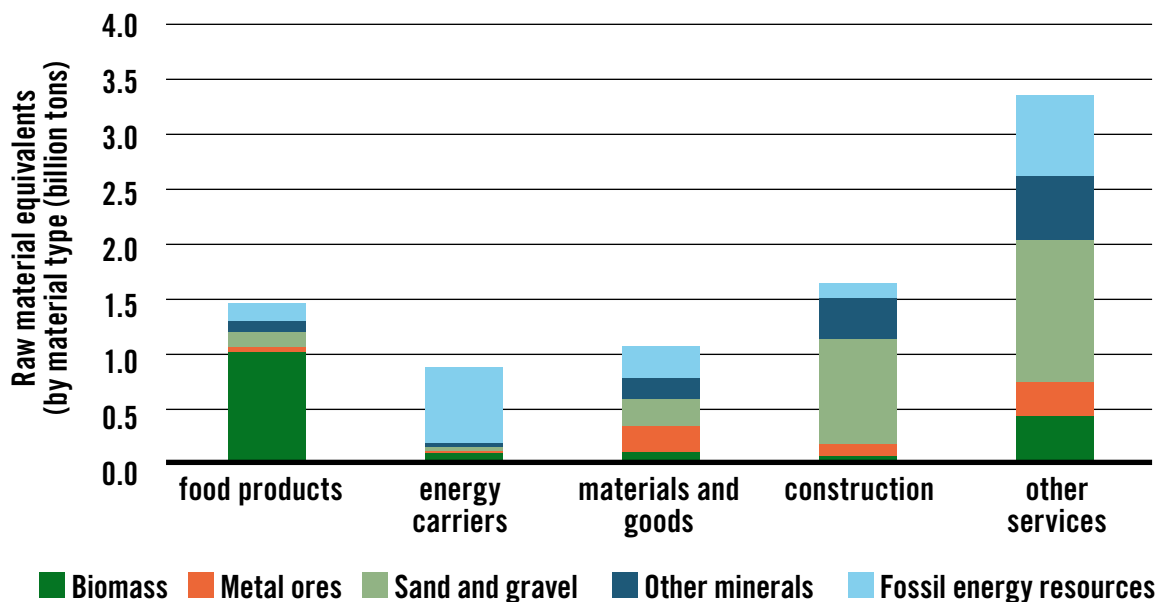


Source: EEA based on Eurostat, 2015b, 2015c.

Impact on natural resource use of consumption and production of different materials based on respective indicators



Raw material consumption (RMC) for various fields of use in the EU 27



Source : EEB

# Driving the shift to a Circular Economy



**Gerben-Jan GERBRANDY**

MEP (ALDE, ENVI), *Shadow rapporteur on 2015 Resolution on Resource efficiency: moving towards a circular economy*



**Nils TORVALDS**

MEP (ALDE, ENVI Subst.) *Shadow Rapporteur on the revision of the Waste directives/Circular Economy Package*

The concept of closing the loop - the transition from a linear to a Circular Economy - has received more attention in recent years and is gaining increased importance. In the circular economy concept, the use of resources already available within the economy are maximised: the aim is to keep these resources at their highest utility and value for as long as possible, thus stimulating a low-carbon and resource efficient economic model. Traditionally carried by environmentalists, the tremendous socio-economic potential of the circular economy is starting to get noticed by the public, policymakers and businesses. By widening the perspective from a traditional sustainability story to a holistic narrative with a clear economic perspective, the Circular Economy has emerged as a top driver for growth and jobs in Europe. In December 2015, the European Commission came forward with a strategy to support the transition to a circular economy model in the EU. With the ratification of the Paris Agreement and the European Union's climate ambitions, the need for action in this field is ever so important. Ratifications and agreements are only as good as their implementation and for us, this provides a clear case for the shift from a linear to a circular economy model. What we have to face is nothing short of a fundamental systemic change.

In order to facilitate this change we have to look at each aspect of the current economic

model and identify key points on which to focus, as well as recognizing and critically evaluating the policy toolbox available.

So where exactly are the biggest gains of the circular economy? To write extensively about this requires more than a two-pager, and we will therefore try to give a short answer by focusing this time on the review of the EU waste legislation and identifying a few aspects under this framework which - to us - bear significant opportunities for the transition to a circular economy. For Liberal and Democratic Members of the European Parliament, leveraging the Single Market is of course key. Under this broad umbrella, some of the main drivers include the setting of clear and ambitious targets for recycling and the creation of markets for secondary raw material. Both of these aspects are important in the creation of qualitative and quantifiable waste streams, and are also key pillars for innovation and job creation.

The clearest and potentially largest advantage of the circular economy is of course the efficient use of primary resources, materials and goods. This has both environmental, economic and social benefits. Resources form the backbone of any economy; however, no other continent is as dependent on third actors as Europe for its resources. This means that the key for Europe's global competitiveness and socio-economic resilience hinges on an

effective use of essentially limited natural resources. The significance of sustainable sourcing therefore exponentially increases. The development of a stable market for secondary raw materials can provide not only a basis for security of supply but also further boost our economy and reduce the impact on the environment.

Our linear economy is today largely based on dissipation and our raw materials are finite. This naturally comes with a heavy price. Secondary raw materials (SRMs) - materials that have been recycled from waste to form new resources - provide a potential *two birds with one stone* -solution: at the sourcing level, dependency on virgin materials is reduced, while waste becomes a valuable resource. At both ends of the product cycle clear gains are made. In principle, this is a textbook example of the decoupling of economic growth from the depletion of resources - a lynchpin of the circular economy. The sooner we move to mainstreaming SRMs into our production and consumption model, the better. Nevertheless, too large of a focus on one side of the coin can lead to unwanted side-effects: waste prevention is at the top of the waste hierarchy, and a focus on secondary raw materials should not lead to an erosion of the principle of waste reduction.

That being said, carefully drafted policy interventions can help in boosting new

business models and markets. Currently, SRMs form only a small percentage of resource use in comparison to primary or virgin materials; however, the market is expanding. With secondary raw materials being emerging commodities in an established market, there are many potential barriers, both economic and otherwise. Promoting the SRM market will require a balanced approach - both push and pull measures will be essential in facilitating the necessary conditions to boost demand and supply. In order to understand the factors involved it is crucial to examine the entire value chain, from beginning to end. This means that both the public and the private sector must be engaged and cooperate in order to find the best solutions; fortunately, so far, there seems to be consensus regarding the importance of the uptake of SRMs, both signalled through first movers in the private sector and the development of a policy framework as part of the EU Circular Economy Action Plan.

Whether the focus is on the uptake of secondary raw materials or other incentives to drive the transition to a circular economy, life cycle thinking has to be applied - policy incentives should ensure that the measures created are favourable from a life cycle and long - term perspective. To this end, there is a need for clear and harmonised qualitative data as well as the creation and application of appropriate indicators to measure the progress towards a circular economy.

The revision of the waste policy framework is the first legislative package launched under the circular economy umbrella. The main foundation for achieving the circular economy is the application of coherent and consistent legislation that is strong enough to achieve the ambitious targets but flexible enough to foster innovation and guarantee the most efficient and technology - neutral way to achieve these ambitions. How to leverage this is the true challenge we are facing. Clear, harmonised definitions together with clear targets are essential. A curiosity to what happens behind these definitions and targets is also key: what is the quality of our waste streams, our re-use and recycling and how can this quality be improved in order to improve the uptake of materials and in the long term to a functioning circular economy?

Only the future can truly tell how well we succeeded. But getting there requires some kind of predictions of the future and a willingness to look further than where your gaze today ends. We are ready to look up and lift our gaze.



# A paradigm shift to sustainable financing



**Sirpa PIETIKÄINEN**

MEP (EPP, ENVI), Rapporteur on 2015 Resolution on Resource efficiency: moving towards a circular economy

**T**raditionally, we are used to thinking about ecology and economy as two worlds apart. This thinking is premised on the assumption of unlimited natural resources, a world with such abundant resources that the end to those resources doesn't figure in traditional models of economic thought. Neither do the negative

external costs such as the ones posed by the climate change.

However, the fact is that physical limits to growth exist. It has been forecasted that global demand for resources will triple by 2050. Currently we already consume some 1.5 planets' worth of resources every year. Following the estimates, we would need some four planets full of resources to satisfy the demand by 2050 under business as usual. Estimations vary, but it is clear that under business as usual, we are also set to exceed the 2 degree Celsius global warming, a limit set by the global community.

Taking into account these facts, it is clear that the current Cartesian worldview can no longer apply. What is needed is a true paradigm shift, one with a holistic approach. When the physical limits to growth are factored in, the whole basis of our economic thinking changes: the way we measure the success and viability of companies or countries, the way we value assets... The list goes on.

A lot of work has already gone into developing resource accounting methodologies, in organisations such as UNEP or OECD. The parameters are there; what is needed now is to put this work into practice. A set of indicators that most parties can globally agree to, needs to be chosen, and applied to

different countries and sectors. A concerted international effort is required to bring this forth and the Financial Stability Board can and should play a central role to promote this effort. Another important aspect is the fact that these indicators need to be binding, to ensure comparability.

This set of agreed-upon accounting rules should subsequently be applied across the whole financial system, to measure the situation of national and global accounts much the same way the GDP currently does. By the same token, credit ratings as well as capital requirements rules must take these sustainability parameters into account.

Financial system is the bloodline feeding our societies, which is why it needs to be at the forefront of the paradigm shift. If the incentives of the financial sector run counter to the goal of building more circular, more resource efficient societies and combatting climate change, the latter efforts are destined to fail.



# Time to make a decisive difference for recycling in Europe



**Emmanuel KATRAKIS**  
Secretary General, European Recycling Industries' Confederation (EuRIC)

**R**ealising the circular economy is a must. With a global middle class population expected to reach 4.9 billion people by 2030, nearly three times more than in 2009, the world cannot continue with the take-make-dispose pattern of the linear economy which exceeds the physical limits of the planet. The circular economy is the only model that guarantees a sustainable sourcing of raw materials to satisfy economic and societal needs while decoupling their production and use from environmental externalities.

Recyclers play a pivotal role in the circular economy. By turning waste into new raw materials, recycling is the link which re-introduces resources into the production chains. It also comes with major economic and environmental benefits:

- **Recycling offers local job opportunities, which cannot be outsourced, as recycling usually takes place close to the source of collection.**
- **Recycling saves massive amounts of CO2 emissions and is hence a key industrial partner to achieve the objectives set by the Paris Agreement to combat climate change.** In its impact assessment of the Circular Economy Package, the European Commission expects 477 tonnes of CO2 to be saved between 2015 and 2035 should the proposed recycling targets for municipal waste alone be met.
- **Raw materials from recycling provide a sustainable source of domestic resources for European and the world manufacturing industries, hence contributing to improve Europe's raw materials trade balance.**

**Paradoxically, it is at the time when recycling is the most needed to realise the circular economy that recyclers face conditions adversely affecting their economic viability.** This situation, mostly caused by plummeting oil and virgin materials prices and regulatory obstacles, shows the limits of the current framework. It must be seized as an opportunity by policy-makers to make legislation smarter by implementing reality-driven solutions that boost recycling. In practice, this means:

1. Thinking circular at design stage;
2. Implementing pull measures to boost markets for raw materials from recycling and reward the environmental benefits of urban mining;
3. Making the internal market for recycling become a reality;
4. Measuring recycling targets alike throughout the EU.

## 1. Thinking circular at design stage;

More than 80% of the environmental impact of a product is determined at the design stage<sup>1</sup>. To close the loop, it is hence essential to think circular at design stage as the reparability and recyclability of products depends on how they are manufactured. Together with manufacturers and NGOs, the work towards eco-design criteria for specific product categories such as electrical and electronic equipment (EEE) or complex packaging needs to start without delay. To contribute to this common objective, EuRIC has published on its website concrete proposals for eco-design of EEE.

## 2. Implementing pull measures to boost markets for raw materials from recycling and reward the environmental benefits of urban mining;

Measures to “push” the supply of recycled materials such as the waste hierarchy, separate collection or recycling targets have played a key part in the development of recycling across Europe. These measures need to be better enforced and strengthened by phasing out not only the landfilling of separately collected streams, but also the incineration of unsorted wastes. Nevertheless, policy-makers should give priority to “pull” measures to correct the failure of the market to reflect, in prices, the environmental benefits of recycling. In other

words, the Package must set out market-based instruments, such as green public procurement, tax rebates, eco-modulation of fees in EPR Schemes based on products recyclability or minimum recycled content requirements for selected products, to pull the demand for raw materials from recycling and level the playing field with virgin ones.

## 3. Making the internal market for recycling become a reality

No need to re-invent the wheel! The ingredients which made the internal market a success need to be transposed to waste and recycling. Why? Because recycling companies, many of them SMEs, are led by entrepreneurs which produce locally new raw materials valued globally. Yet, recyclers suffer from the lack of legal certainty as to whether raw materials from recycling are a waste or a product, hence the need to make progress on end-of-waste criteria. Furthermore, substantial administrative obstacles to transboundary movements of waste within Europe or beyond hinder recycling. Aligning EU procedures for waste shipments with the pace of business will be a success or failure factor for the creation of a much needed internal market for recycling.

Another key element is to make of fair competition an integral part of the circular economy to foster innovation and efficient allocation of resources. In practical terms, the European legislator needs to safeguard the “quantity” criterion in the definition of municipal waste so as to make a clear distinction between municipal waste on one hand and commercial and industrial waste on the other and ensure that all streams remain open to competition.

## 4. Measuring recycling targets alike throughout the EU

Ambitious recycling targets for 2030 provide predictability which is a key pre-requisite to investments. It is of equal importance to set rules to measure recycling targets uniformly across Europe. Measuring recycling targets at the input into “final recycling”, defined by reference to a “production process”, one of the two options proposed in the legislative part of the Package, runs against the objective of accurate statistics across the EU. At production stage, it is impossible to trace back the origin of the waste stream(s) for which targets have been set. Instead, as a general principle, EuRIC calls for measuring targets at the point where waste is turned into a new resource which can substitute virgin materials so as to effectively benchmark progress in meeting real recycling rates.

<sup>1</sup> Ecodesign your future – How ecodesign can help the environment by making products smarter, European Commission, 2012

# Rethinking the Future of Plastics in Europe



**Rob OPSOMER**

New Plastics Economy Lead, Ellen MacArthur Foundation

After 40 years of effort, only 14% of global plastic packaging is collected for recycling. Even in Europe, where collected-for-recycling rates are around 40%, less than 20% of material value is retained for a subsequent use after additional value losses in sorting and reprocessing are factored in. Overwhelmingly single-use, USD 80–120 billion of the material's value is lost to the global economy each year. Moreover, about a third of all plastic packaging put on the market globally escapes collection systems and leaks into the natural environment – with a significant share ending up in the oceans. The cost of externalities is estimated at USD 40 billion annually — exceeding the plastic packaging industry's profit pool. In short, plastic packaging represents a significant economic opportunity and is a natural focus of efforts to scale a circular economic model.

Plastics are omnipresent in the global economy. Nearly every European citizen uses dozens of plastic items a day. As could be expected from such widely used materials, plastics bring many benefits: they are lightweight, versatile and cheap; they help protect our food; and make our cars lighter. At the same time, however, plastics – and especially plastic packaging – are one of the most iconic examples of our current linear take-make-dispose economy.

In recent years plastics have come to the forefront of international debates, and moved from a fringe to a central issue in

policy discussions and corporate boardrooms alike. Regulatory activity on plastics has been increasing in cities and countries across Europe and the rest of the world. NGOs are becoming more active in the field, with for example the recently launched #breakfreefromplastic NGO movement growing its membership from a few dozen to several hundred members in a matter of weeks. In this international context, the timing of the European Commission's decision to single out plastics as a priority area in its Action Plan for the Circular Economy seems opportune.

In pursuing its mission of accelerating the transition towards a circular economy, the Ellen MacArthur Foundation has also concentrated its efforts on this fast growing material flow, considering its associated benefits as well as its challenges. In January 2016 it published, in partnership with the World Economic Forum and McKinsey & Co. "*The New Plastics Economy – Rethinking the Future of Plastics*". This report provides, for the first time, a comprehensive view of the global plastics value chain and its associated externalities. As well as analysing the current situation, the research outlines a more effective plastics system, based on the principles of the circular economy, and sets out a blueprint for how to achieve it.

In May 2016, the Ellen MacArthur Foundation launched the 3-year *New Plastics Economy initiative*, to mobilise the report's recommendations. Applying the circular economy framework, the initiative brings together key stakeholders to re-think and re-design the future of plastics, starting with packaging. Players of People's Postcode Lottery (GB), the MAVA Foundation and the Oak Foundation are philanthropic funders of the initiative, and Wendy Schmidt, through The Eric and Wendy Schmidt Fund for Strategic Innovation, is its lead philanthropic partner. Amcor, The Coca-Cola Company, MARS, Unilever and Veolia are the initiative's core partners.

The *New Plastics Economy initiative* focuses on five interlinked and mutually reinforcing building blocks:

1. Dialogue mechanism – Bringing together for the first time a group of leading companies and cities across the global plastics value chain to drive collaborative projects
2. Global Plastics Protocol – Re-thinking plastic packaging materials, formats, after-use systems and standards to provide an

economically and environmentally attractive target state to innovate towards

3. Innovation moon-shots – Mobilising ambitious and targeted innovation efforts focused on system wide solutions that have the potential to scale
4. Evidence base – Closing critical knowledge gaps by building an economic and scientific evidence base
5. Outreach – Engaging a broad set of stakeholders, including citizens, educators, students, policymakers, NGOs, and industry associations in the redesign of a better plastics system

The New Plastics Economy initiative is preparing to release in early 2017 a new set of analytical insights and announce a series of *catalytic actions* to help move the plastics value chain into a positive spiral of value capture, stronger economics, and better environmental outcomes. In this transition towards a more circular model for the plastics industry, certain aspects need to be kept in mind:

**Design is critical.** Creating an effective circular plastics economy cannot be done by end-of-pipe improvements alone. Format and material design are essential to creating value that can be captured after-use.

➤ **Looking beyond recycling is essential.**

For some applications, switching to reuse models already proven in the market holds significant value creation potential. For others, a viable and circular after-use pathway does not exist today – meaning there is need for fundamental redesign of materials, formats, delivery models and reprocessing technologies.

➤ **Regulation can play an important role**

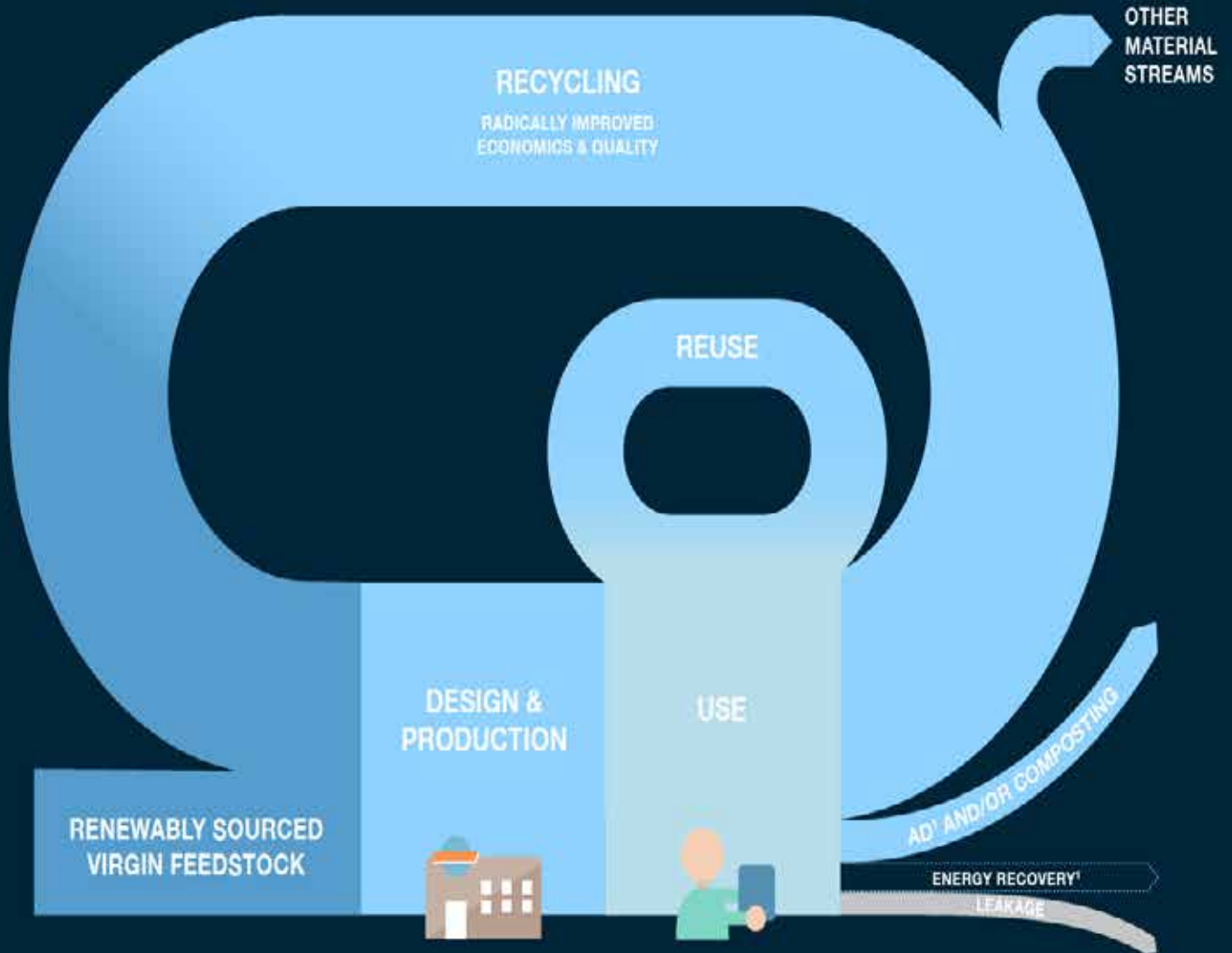
in providing the enabling conditions and, as appropriate, setting direction for the transition. Given plummeting prices of virgin plastics in recent years, increasing visibility of the extent of the negative externalities of plastics leaking into ecosystems and infrastructure, and the underlying challenges of highly distributed material flows, this is particularly true for plastics.

The New Plastics Economy initiative aims to bring about systemic change, involving all actors and aspects of the plastics industry. Only with a collaborative approach can plastics overcome the limitations of the linear approach and become an iconic example of the circular economy.



# THE NEW PLASTICS ECONOMY

## 1 CREATE AN EFFECTIVE AFTER-USE PLASTICS ECONOMY



## 3 DECOUPLE PLASTICS FROM FOSSIL FEEDSTOCKS

## 2 DRASTICALLY REDUCE THE LEAKAGE OF PLASTICS INTO NATURAL SYSTEMS & OTHER NEGATIVE EXTERNALITIES

WORLD ECONOMIC FORUM, ELLEN MACARTHUR FOUNDATION, MCKINSEY & COMPANY,  
A NEW PLASTICS ECONOMY: RETHINKING THE FUTURE OF PLASTICS (2016)  
[WWW.WEFORUM.ORG/REPORTS](http://WWW.WEFORUM.ORG/REPORTS)

<sup>1</sup> Anaerobic digestion  
<sup>2</sup> The role of, and boundary conditions for, energy recovery in the New Plastics Economy needs to be further investigated.  
Source: Project Mainstream analysis

# Maximize the Potential of all Materials and Products with Use in Our Daily Lives



**Miriam DALLI**  
MEP (S&D, ENVI)

The world we live in today is different than before. Today, we are experiencing a significant change in what we consume, its amounts, from what material, how much we buy, how much of it can be recycled. The reality is, that resources are not infinite. As a society of consumers, we are experiencing new challenges and issues which we must solve in order to sustain a viable future. This includes analyzing the relationship between the extents of our consumption and moving towards valuing the importance of recycling.

Past economic models used for production have been based on fossil fuels to manufacture cost effective conventional non-renewable products. This model is not sustainable for our current era, nor does it create the possibility for further growth and innovation. It is particularly important that we recognise that our supply of raw materials cannot continue to meet the demands of consumption posed by society. Pollution must be taken seriously as it plays an active role in harming our ecosystems and endangering various animal species.

The manufacturing of plastic, for instance, has restructured functionality in society for the past fifty years. It is a material used extensively throughout most sectors of European industry and which ultimately affects all aspects of global production. Uncontainable, global production has surged from 15 million metric tons in 1964 to 311 million metric tons in 2014, according to the study done

by McKinsey, a consultancy group based in Belgium. If this model is not addressed and reconstructed, it is thought that our plastic consumption could double to 600 million metric tons globally within the next twenty years.

Europe is currently using a model, which makes consumption and waste unsustainable. Annually Europe consumes nearly 56 million tons of plastic while producing 24 million tons of plastic waste. It is important to address the substantial problem of plastic packaging which is thrown away and is contributing to polluting our environment through adequate legislation. This material undeniably ends up in landfills and in our oceans, or incinerated, we need to act now to address this issue. We must increase our national and European recycling capacities and increase the current 26% plastic waste collection rate. Europe is exporting 50% of all collected plastic waste to countries outside the EU without proper regulatory control. This means that we need to ensure that exported plastic waste is recycled according to European and International targets.

A sustainable future in raw materials, starts from a paradigm shift in emphasizing the vital role recycling carries in reshaping our consumption habits. Applying circular-economic principles to all our products will improve recycling potential and bring us closer to a cleaner future. Creating a circular economy requires fundamental changes throughout the value chain, from product design and production processes to new business models and consumption patterns. Recycling will ultimately turn waste into a resource. A circular economy could result in cost savings, increase the competitiveness of Europe's industry while delivering net benefits in terms of job opportunities.

A new harmonized and sustainable model of recycling will require the cooperation of business and research actors to reconstruct the flow of materials and replace outdated manufacturing methods. This will also need to be backed up with policy and investment. It is vital to educate businesses and consumers on the cost-effective economic impact a shift in production can bring about if properly rolled out and implemented. This will require a large multi-scale initiative to be achieved that cannot be done by one single entity alone or solely by one Member State. I am positive

that governments will launch initiatives and funding programme to bring greater awareness in schools, homes and public places to educate as many people as possible. Let us teach our children the value of recycling and let us be the example for them to follow.

Global leaders, governments and policy makers have joined forces last year in Cop21 in Paris to agree on global targets for greenhouse gas emissions and on efficient ways to reduce waste globally. The foundations have been set, but the biggest hurdle is now to bridge the gap between targets and citizens' daily lives and implementation. It is up to each and every one of us to maximize the use of our materials and products in our daily life. It is important to balance between regulation and commitment among all participants of society in finding solutions, which will benefit our environment and our economy. Climate change will impact all of us and it is a shared responsibility. Let us not take it for granted.

# Waste recovery and recycling for sustainable construction



**Cédric DE MEEÛS**

Group Head Public Affairs, LafargeHolcim

As the demand for limited resources increases, traditional industrial models are being challenged. Circular economy systems aim to make an economic paradigm shift by eliminating the waste of resources and maximizing efficiency at all stages of processes. At LafargeHolcim, this endeavor began several decades ago when the Group pioneered the co-processing of waste materials.

The recovery and recycling of waste for the production of construction materials now lies at the heart of our industrial strategy. By 2030, we aim to increase the use of resources made from waste in our operations to 80 million tons per year.

**The implementation and enforcement of incentivizing policy tools will play an essential role to reach the full potential offered by the industrial co-processing of waste and the market uptake of recycled construction & demolition waste (C&DW).**

## Combining energy recovery and material recycling through co-processing

Co-processing refers to the simultaneous recovery of energy and the recycling of minerals contained in waste. The combustible part of the waste provides the fuel needed for

the manufacturing process and the mineral part substitutes primary raw materials (such as clay or iron) needed for producing clinker, the main component of cement. Co-processing allows to recover / recycled close to 100% of the material input without generating residual waste. Co-processing was initiated over 30 years ago in Europe and is now used and recognized across the globe. It provides an industrial response to accelerate the substitution of fossil fuels and primary raw materials within a single industrial process.

In its recent study<sup>1</sup>, Ecofys highlighted that 'there is no technical limitation at the cement plants to increase the share of alternative fuels from 36% now to 95% EU-wide'. Besides accelerating the above-mentioned substitutions, this alone can save expenditures in waste management infrastructure of up to €15.6 billion, avoid emissions of 41 Mtonnes of CO<sub>2</sub> per year and ensure the recycling of 1.4 Mtonnes of mineral ashes that would otherwise be landfilled.

**Reaching this level of ambition requires a regulatory framework that leaves open the range of waste treatment options and recognizes their specific added-value in accordance with the EU waste hierarchy (e.g. by incentivizing the simultaneous recovery and recycling of non-recyclable waste).**

- › **Include material recycling** from waste and fuel ashes towards recycling targets
- › **Leave open the range of waste treatment** options (incl. pre-treatment) for the assessment of the best technical feasibility, economic viability and environmental protection.
- › **Abstain from definitions that will limit the possibilities** for recovering and recycling waste (e.g. "mixing" aiming at stabilizing wastes does not correspond to "dilution")

## Giving a second life to buildings and infrastructure

According to the EC, C&DW accounts for a third of the EU's total waste production per year, amounting to some 450-500 million tonnes, a third of which is concrete. However C&DW recycling rates are low in many Member States due to a lack of efficient collection and sorting, combined with an insufficient demand for, and confidence in, recycled materials as well as the absence of incentivizing regulations (incl. public procurement). These aspects are two sides of the same coin. Often, the infrastructure is not in place to allow for quality recycled materials to reach a potential client in a cost-efficient manner. Considering that concrete can be 100% recycled after demolition, the potential is however significant and will be leveraged through the development of an incentivizing policy framework that creates a sufficient level of "market pull".

### Policy fundamentals for C&DW

- › **Encourage all recycling** that results in a reduced use of virgin materials & energy, be it "open loop" (i.e. recycling in an application different to the original one) or "closed loop"
- › Effectively **phase out the landfilling** of C&DW
- › **Drive a performance-based approach** to determine the desirable use of recycled material from C&DW
- › **Do not set simple targets** on the recycled content of materials without a lifecycle approach
- › Imposing levies on primary raw materials **does not necessarily create the necessary demand** for recycled materials.

We aim at multiplying by 4 the total volume of recycled aggregates that we produce from C&DW and from reclaimed asphalt pavement. Recycling C&DW improves buildings' lifecycle performance and increases resource efficiency in a world where natural resources are becoming increasingly scarce. Our cities will be the quarries of tomorrow.

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<sup>1</sup> Ecofys, May 2016, "Market opportunities for use of alternative fuels in cement plants across the EU"

# Kick-starting the Circular Economy!

## What legislative orientations to tap EU's recycling potential?



**David BERMAN**

Head of EU Public Affairs, VEOLIA

As an operator of resource management in the water, waste and energy sectors, recycling is at the core of Veolia's activities. In 2015, Veolia treated 43 million tons of waste and recovered more than 30 million into energy or materials, mostly in the EU.

Despite the pressure on raw materials' availability - due to growing population and needs coupled with the effects of climate change - providing innovative recycling solutions both for cities and industries requires overcoming significant challenges.

Surprisingly, if some of these challenges can be of technical nature: complexity and variety of polymers in a given industry, etc.; the main obstacles to the development of recycling remain regulatory and economical ones.

In Vroomshoop, Netherlands, innovative solutions allows Veolia to produce more than 40,000 T of recycled Polypropylene each year. This high quality secondary raw material find its way into automotive components, garden furniture, vacuum cleaners, storage boxes or plant containers.



*The Waste directives currently under revision offer a good basis to address these obstacles.*

### 1) Extending the ambitious recycling targets to all non-hazardous Commercial & Industrial waste

Although the "Circular Economy Package"<sup>1</sup> encompasses measures applying to the whole economic value chain, binding recycling targets to be achieved by 2030 are at the core of the legislative proposals published by the Commission last year. These ambitious targets mainly address municipal waste preparation for reuse and recycling (65%) and recycling packaging waste (75%). **Extending them to other non-hazardous commercial and industrial waste makes sense with regard to their weight in the total waste generation**<sup>2</sup>. Furthermore, these streams representing a more important amount of recyclable materials and energy without need for prior decontamination would help reach the targets.

An important political signal would be given at least by foreseeing such extension, while leaving time to gather appropriate data and prepare proper impact assessment.

<sup>1</sup> [http://ec.europa.eu/environment/circular-economy/index\\_en.htm](http://ec.europa.eu/environment/circular-economy/index_en.htm)

<sup>2</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Waste\\_generation\\_by\\_economic\\_activities\\_and\\_households,\\_EU-28,\\_2014\\_\(%25\)YB16.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Waste_generation_by_economic_activities_and_households,_EU-28,_2014_(%25)YB16.png)

### 2) Clearly distinguishing Commercial & Industrial waste from Municipal waste, including a 'quantity' criterion

The definition of Municipal waste will cover "household waste and comparable waste from other sources". The notion of "comparable" should not leave room for uncertainty with regards to the scope of public service obligations: **households should not bear the costly recycling of waste produced by economic activities**, especially when there is already a functioning open market.

Hence the definition of Municipal waste should be limited to household waste and waste from other sources "comparable in nature, composition and quantity". Without this reference and a measurable criterion, there is a risk that the scope of municipal waste will encompass a significant quantity of waste from commercial & industrial activities that is today treated on B-to-B markets, enabling the application of the polluter-pays principle.

In Rostock, Germany, Veolia gives plastic bottles a second life through a PET (Poly Ethylene Terephthalate) "bottle-to-bottle" recycling process. 1 billion plastic bottles are recycled each. Manufacturing a plastic bottle with recycled rather than virgin PET reduces CO2 emissions by 70%.



### 3) Ensuring a single calculation method of recycling rates, based on the output from the sorting centre

The question of the calculation method of the recycling target is with no doubt one the most important point to be addressed within the Waste Framework directive. **A unique calculation method is paramount to guarantee harmonised reporting** and effective

benchmarking, thus to measure progress. This calculation method should be **based on the streams exiting the sorting centres in order to ensure accuracy on the actual recycling rates**, including assessing the exported flows otherwise difficult to take into account.

**Extract of Commission Impact assessment to the Waste Framework directive revision**

**SWD(2014) 207 final, PART 1/6 :**

*“Calculation methods are too complex and not sufficiently harmonised to allow a proper comparison of MS performance. For instance, 4 calculation methods are permitted for assessing the municipal waste recycling target - see Box 1. MS had to report by September 2013 on the recycling/reuse rates according to the method they have chosen for the calculation of the target. A comparison between the reported recycling rates by the MS according to the method they have chosen and the recycling rates for municipal waste as reported annually to Eurostat since the mid-nineties – equal to calculation method 4 and based on OECD/Eurostat guidelines - shows that depending on the method chosen, the results could vary significantly...”*

**4) Setting the right economic incentives**

While moving up the waste hierarchy, we recommend keeping flexibility in **developing appropriate economic instruments and incentives to boost the uptake of a market for recycled materials**, as **incineration and landfill cannot realistically be phased out** in the near future.

Ultimately, Circular Economy should lead to the generation of Secondary Raw Materials from recycled resources. However, the economic viability of this model needs to be encouraged, especially at times when prices of raw materials including fossil fuels are depressed. **Market correction instruments** must be put in place, such as minimum use of green services/or a minimum content of recycled materials in industrial production or in public procurement. In parallel, **qualitative requirements for recycled materials** are to be made mandatory in order for producers and end-users to trust they get the same specifications than their virgin equivalents.

Technically, it is feasible to transform sewage sludge into bioplastics. So far, it remains at prototype-level as there has been no uptake for a market allowing the development of an economically viable production.

*High quality sewage sludge can also be a valuable component for biofertilizers; ongoing revision of the EU regulation on fertilizers should take this option into account!*

*The EU Circular Economy package also rightly identifies that actions have to be taken in order to recycle wastewater to limit the over-abstraction of vital fresh water resources.*

**5) EU standards effectively stimulating the recycling of treated wastewater**

Both in agriculture, the leisure or in industrial sectors, **water recycling practices** have significantly developed in the last years -and not only in the Mediterranean countries- showing **potentially high environmental and economic benefits**. In this context, the Commission is considering a legislative proposal setting minimum quality requirements at EU

level for the use of treated wastewater for agricultural irrigation and aquifer recharge.

Agricultural irrigation uses nearly 70% of abstracted water. The upcoming **minimum standards** should provide a scientifically and politically agreed playing field to unlock the development of water recycling, based on existing practices. It would thus help **avoiding the trap of a too stringent legislation**. Ultimately, developing the recycling of municipal wastewater will only optimize the huge investments already consented for its treatment.

The Milano-Nosedo Waste Water Treatment Plant provides annually 160 Mm<sup>3</sup> recycled water suitable for the Vettabbia Farmers Consortium to irrigate 4100 ha of rice, corn, and other cereals.



# The role of biowaste in the emerging circular economy

## Flemish insights



**Mark DEMESMAEKER**

MEP (ECR, ENVI), Shadow Rapporteur on the revision of the Waste directives/Circular Economy package

The EU depends heavily on the import of raw materials, yet a significant amount of these natural resources are rapidly depleting, and we continue to waste considerable quantities of these valuable resources. Clearly, a “business as usual” scenario is not an option.

Therefore, a key challenge will be to reclaim as many resources as possible within the EU. Transitioning to a circular economy is an economic necessity, essential for the EU’s long-term competitiveness and important for local job creation.

An important and crucial step to reclaiming valuable resources within the EU is to increase our recycling capacity and performance, enhance reuse and repair and extend the lifetime of products. This is where the legislative package on waste legislation comes into the picture. We should make optimal use of waste legislation, precisely because of its economic importance.

When we know that biowaste represents approximately one third of municipal waste, it is obvious that its management must be a crucial part of the ongoing discussions on the circular economy package. The sustainable management of biowaste offers many benefits. Absence of measures on the contrary, are detrimental to our environment.

Currently the separate collection of biowaste is not mandatory within the EU. Member States are only “encouraged” to take

action, for example, through the limits to landfilling of biowaste set in the 1999 Landfill Directive. The rationale behind these limits is clear: landfilling is always the last resort and worst option as it consumes our open space and leads to valuable material loss. Moreover landfilling of biowaste produces pollutant gases such as methane. The 2008 Waste Framework Directive also encourages separate collection, but it lacks binding measures and a specific recycling target.

Therefore, the current legislative framework seriously limits opportunities on biowaste. The EEA report of 2013<sup>1</sup> rightly concludes that the weak results on biowaste recycling are mainly due to “the absence of an EU-wide obligation to recycle bio-waste” and the absence of “common EU quality standards or end-of-waste criteria for generated compost/digestate”. However, the report stresses that increased biowaste recycling offers the possibility to boost Member States overall recycling rates because “many EEA member countries with a high share of bio-waste in their municipal waste still recycle only a limited amount of bio-waste, resulting in a relatively marginal effect of bio-waste recycling on total municipal waste recycling rates”.

Flanders, the nation I represent in the European Parliament, has engaged in the separate collection and recycling of biowaste (vegetable, food and garden waste) since 1992. As a frontrunner, Flanders has always been very vocal in Europe to advocate the importance of smart biowaste management (for example via the “The Biowaste Coalition”). Under the 2010 Council Presidency, Flanders was actively pushing for a separate biowaste directive.

Since it is clear that the European Commission is not willing to come forward with specific legislation on biowaste, we need to seize all the opportunities to strengthen the biowaste measures in the ongoing revision of the waste package. My wish list contains five key priorities:

- Close possible loopholes for mandatory separate collection in article 22, mainly by deleting the so-called TEEB-formula;

- Insert a specific and ambitious biowaste recycling target;
- Reduce the generation of biowaste by establishing a food waste reduction target of 50% by 2030, in line with the Sustainable Development Goals;
- Phase-out the landfilling of municipal waste to 5% by 2030 and make it clear that recyclable and biodegradable waste can no longer be landfilled. Combine this with a sound application of the waste hierarchy to avoid mere shift towards incineration (strengthening the recycling targets in WFD also helps in this regard);
- Establish European end-of-waste criteria for biowaste.

Allow me to illustrate why this is so important by way of some inspirational examples from Flanders.

In 2015<sup>2</sup>, more than 800.000 tons of vegetable, food and garden waste streams were converted into 360.000 tons of high-quality soil improver, i.e. compost. Furthermore 2, 2 million tons of other biowaste streams (such as manure, food processing residues) were converted into organic fertilisers. By doing so, we obtain a valuable resource which contributes to healthy soils in Flemish gardens and parks, and to the healthy production of food crops and animal feed.

Combatting climate change is another important benefit from biowaste collection and recycling, which often receives little attention. By replacing primary resources (such as peat and chemical fertilisers) and producing renewable energy through the production of biogas and sustainable energy valorization of composting residues, the recovery of organic waste represents in Flanders an annual greenhouse gas reduction of 880.000 to 1.135.000 tons of CO<sub>2</sub>-equivalents.<sup>3</sup> It is important to highlight that only woody biomass selected from the input of green waste into composting plants is eligible for renewable energy support: the cascading principle in biowaste management put into practice.

1 “Managing municipal solid waste”, p. 16-18 <http://www.eea.europa.eu/publications/managing-municipal-solid-waste>

2 Source: <http://www.vlaco.be/vlaco-vzw/publicaties/activiteitenverslag-2015>, p. 16

3 Idem



Furthermore, new innovative solutions for valorising biowaste streams are being developed. The Flemish company Millibeter investigates how biowaste can be used as raw material for insect breeding. Food waste is on the menu for larvae breeding. Protein production based on insect breeding has a 5000 times higher yield per square meter compared to soybean production<sup>4</sup>.

**To conclude:**

Biowaste is a valuable and abundant resource which we cannot afford to squander. There is a compelling case for the mandatory separate collection of biowaste, an ambitious recycling target, and end-of-waste criteria to ensure high quality recycling output and the uptake of biowaste as a secondary raw material. In the absence of a dedicated biowaste Directive, we should use the current revision of the waste package so that biowaste can finally start living up to its potential!

<sup>4</sup> Source: <http://www.iwt.be/nieuws/cases/millibeter-de-gevlugelde-oplossing>

# Establishing the Three R's economic paradigm: Reducing consumption of resources, Re-using and Recycling



**Gilles PARGNEAUX**

MEP (S&D), Vice-Chair of the ENVI Committee

The shortest distance between two points has always been a straight line.

However, the so-called “linear” economy, as industrialised societies have known it since the end of the 18th century (extract-make-use-dispose), is living its final days.

At the start of this globalised 21st century, this model is no longer sustainable due to its impact on the climate and the shortage of resources to which the extension of this model to the billions of inhabitants of the emerging countries would inevitably give rise.

Only the transition towards a circular economy, based on a development concerned with the efficient use of resources and the reduction of environmental impacts, can help address these challenges.

A new economic paradigm based of the Three R's should be established as soon as possible: Reducing resource consumption, Re-using and Recycling.

Beside environment protection, a circular economy will generate numerous socio-economic benefits for the European Union.

Published in September 2015, a report from the Ellen MacArthur Foundation entitled “A circular economy vision for a competitive Europe” shows that a circular economy would

help the European Union achieve an annual profit of €1,800 billion by 2030, amounting to twice the profits earned with the current linear development path (€900 billion).

According to the report, establishing a circular economy would lead to a €3,000 increase in the average annual income of European households (i.e. 11% more than today) and to halving CO2 emissions by 2030 compared to current levels.

This new economic model would also result in a 32% reduction by 2030 and 53% by 2050 in primary resources, including virgin materials used in the automotive and construction sectors, building land plots, synthetic fertilisers, pesticides, water for agriculture, as well as fuels and electricity generated from fossil energy sources.

With the development of a circular economy, the European Commission argues that European companies would save €600 billion yearly, i.e. 8% of their annual turnover.

The European Investment Bank (EIB) believes that a circular economy would create 100,000 jobs by 2020 and 2 million by 2030.

For these figures to become a reality, we should take decisive action to promote the efficient use of resources and the reduction of waste generation.

Such a change in the economic paradigm requires ambitious policies based on a solid legislative framework.

This is the reason why I am in favour of fixing ambitious targets.

First, I support fixing the binding target of reducing by 5% the disposal of municipal waste by 2030 and a recycling rate of 60% of municipal waste by 2025 and 70% by 2030.

Second, I am in favour of an objective to prepare for the re-use and recycling of packaging waste to at least 70% by 2025 and 80% by 2030.

Third, I would like to see a compulsory separate collection of bio-waste set up by 2020. By 2025, Member States should ensure a 65% recycling rate of bio-waste from municipal waste.

Fourth, I think that this directive should aim at reducing food waste by at least 50% by 2030. About 100 million tons of food are wasted at European level every year. If nothing is done, this number could climb to 120 million tons in 2020.

It is high time we transformed our economy to create jobs, cut costs for companies, and above all promote a cleaner environment!





# Today's products are the raw materials of tomorrow



**Stephane ARDITI**

*Products & Waste Policy Manager, EEB*

It is increasingly clear that the ingredients of tomorrow's goods are embedded in today's products and that the latter should be seen as our reservoirs of raw materials, not the untouched materials of the earth's crust, whose extraction is damaging to nature, the climate and people's health. But while the idea is simple, putting it into practice demands fundamental changes to the way we do business and our relationship with the products we buy.

Let's take shoes as an example. Traditionally, the most important factor when deciding on the materials to use for a new model of trainer is how well they will sell and the amount of profit they will generate. Comfort, fashion and style all play a part, but sales figures remain the primary, if not exclusive, deciding factor of what goes into each design. However, this is starting to change and some companies are now paying more attention to the amount of resources their manufacturing processes use and the greenhouse gases they emit.

But this concern ends as soon as a customer walks out of a store with a new pair of shoes. It is this gap in the chain that we now need to address. Rather than the 'out of shop, out of mind' approach that businesses currently apply to their products, they should be incentivised to consider the trainers they sell as a reservoir of materials for future products. In short, companies need to be pushed to see the

advantage of keeping responsibility for their products throughout the supply and sales chains and not renouncing responsibility after the point of sale.

Switching to this view would motivate companies to design their shoes, or other products, so that the materials inside could be easily retrieved, reused or, as a final step, recycled when they were no longer wanted by the customer. How durable, retrievable and repurposable a material is would be taken into account from the design phase and become part of a company's entire business model and strategy. Such an approach would allow customers to replace parts of their shoe - such as the sole - without having to throw away the entire item and buy a new one. They could also customize their shoes in line with the latest trends or their own personal tastes. Further, businesses could open up new revenue streams by trading salvaged materials to other companies or industries, or sending them to be recycled.

This is not pie-in-the-sky thinking. Many big brands, including Adidas, are already designing models made completely from retrieved ocean plastic, and plan to eliminate all fresh plastic from their supply chains. With this in mind, we may not be far from a time when our shoes are designed to be recycled, repaired or even leased to us and replaced when they wear out or our children outgrow them.

If the building blocks for future commodities can already be found in today's products, it is conceivable there will be a time when minerals and metals are more prevalent in pre-existing goods than in the earth's crust. It therefore makes total sense to start now to ensure that salvaging raw materials from goods already in circulation, rather than extracting them afresh, becomes mainstream, systematic business practice. This is cost-effective and better for people and the planet.

Ensuring that materials salvaged from pre-existing products are detoxified of potentially harmful substances will also become increasingly important, allowing reuse or recycling to take place without the need to 'de-pollute' them, and preventing the buildup of potentially harmful toxic substances in future products. And if the company making

the shoes retains ownership of the materials after they are sold, the economic interest in ensuring these substances are non-toxic becomes even stronger.

If we take the view that the future of raw materials is in today's products, this will also have a profound impact on how Europe currently manages its waste - and what we consider as waste in the first place. Today's waste is yesterday's products, and can be made into tomorrow's products again. This approach will, in turn, generate less waste and should lead to a significant downsizing of Europe's current waste disposal techniques with obsolete processing plants phased out over time.

Unfortunately, though, this is not what seems to be happening. A number of supposedly 'realistic' reports and policymakers are peddling the theory that today's waste infrastructure will not be able to handle future amounts of rubbish, especially if we aim to stop land-filling. They suggest to invest in new 'waste to energy' plants that will need to run for 20 to 30 years to return the initial amount invested in them by local and national governments. Yet over-investing today in waste-to-energy infrastructure will lock us into a vicious circle, hindering the emergence of reusable materials in manufacturing processes and killing the potential for a circular economy.

To avoid this vision and ensure a healthier future for people and the environment, there are some sound principles around which future resource management must be based. These include designing products whose materials can be easily retrieved and reused - thereby offering a stable financial base for companies - and removing the contractual obligation for municipalities and citizens to produce an agreed amount of waste to supply new waste to energy plants.

We need to enable a replacement of today's mineral mines with tomorrow's urban alternative by focusing on circularity, and by using the reuse and repurposing potential of the materials embedded in our products as the building blocks of future sustainable supply chains.

# The recovery of secondary raw materials, a crucial issue for our companies!



**Françoise GROSSETÊTE**

MEP (EPP, ENVI), Vice-President of the EEP group

Companies operate in a globalized economic system, which is now disrupted by issues such as the scarcity of natural resources, the rising cost of energy and environmental degradation.

The circular economy offers companies concrete solutions to these challenges through various approaches such as recycling, reuse or eco-design. With this new economy, Europe and France have a real leverage to limit their exposure to the tensions on the commodity markets and their dependence on certain suppliers. In addition, it could save about 600 billion euros net for EU businesses, or 8% of their annual turnover, while reducing greenhouse gas total annual emissions from 2 to 4%. Finally, the implementation of additional measures layout for increasing the productivity of resources by 30% by 2030 could increase GDP by 1%, while creating over 2 million more jobs.

With the new legislative package on the circular economy, the European Commission hopes to «reinvent the European economy» and allow European companies to have access more competitive to raw materials from better recycling. Indeed, as the world discusses the virtues of circular economy, some recycled products, more environmentally friendly, are losing market share to products made from virgin materials, more competitive on the market. Creating a market for secondary raw

materials should therefore be the focus of a new vision.

The Member States should be able to use economic instruments to offset the cost differences with virgin materials, boost the industry and reward the environmental benefits of the raw materials from recycling. The list of economic instruments should be incentivizing, available to Member States. Everyone is free to choose the most appropriate measure based on the efforts to which they have committed themselves.

For some categories of waste, such as those containing iron, steel, aluminum or copper, paper and cardboard, glass waste, compost or plastic waste, the waste status of the output conditions must be specified at European level. This is why it is essential to harmonize the legal status of waste. Today, it constitutes a real obstacle to the free movement of recycled materials in Europe. It is urgent to accelerate the setting up harmonized criteria for end of waste status to ensure the functioning of internal market for recycling.

The European Commission wants to introduce the new concept of «by-products» to soften the output conditions of waste status. Is it not a good idea because it suggests that there is an intermediate status between the waste status and the product, which could lead to errors in the interpretation of legislation. We must move quickly and well. Beware of too simplistic measures that would lead to ambivalences harmful for business.

The challenge is important. Many experiments dedicated in particular to the recovery of the construction materials already exist in the territories. These practices must be valued and multiplied on the French and European territory. But still too many sectors today are struggling to develop their products from secondary raw materials.

For example, the tire sector has difficulties to promote their retreads. Yet a retread can be reused three times, which saves on average 100 kg of raw materials, reduce CO2 emissions by twenty percent and halve the generation of waste. Unfortunately, these products are in competition with cheaper tires, but single-life, and very often imported.

The plastics sector is another good example because many potential buyers are discouraged by the rate of potential impurities in the recycled plastic. From paper to metal or fertilizer from organic waste, all types of secondary raw materials are affected by quality problems.

The European Commission in the field of circular economy should therefore think about a strategy to remove obstacles to the proper functioning of the internal market for secondary raw materials. It is about the competitiveness of our companies ... we can not afford to miss the train!

# ICT Industry success stories of using recycled plastics: DIGITALEUROPE publishes report



**John HIGGINS**  
Director General of DIGITALEUROPE

The Circular Economy and the development of secondary raw material markets are high on the European agenda, and are attracting member state support. The ICT industry has been tackling the challenges of moving to a circular economy from multiple angles. One of them is the use of recycled plastics in their products.

Since the early 2000s, the digital technology industry has been experimenting with the use of recycled plastics in electric and electronic equipment (EEE). Recycled plastics are now found in a variety of ICT products as companies start to use recycled plastics as part of voluntary agreements/certifications or broader green marketing initiatives.

The imaging equipment industry, for example, has signed a voluntary agreement (VA) in the framework of the Ecodesign Directive, which requires producers to declare the use of recycled plastics to customers since 2015. The VA was signed by 15 producers that account for more than 95% of all office and household imaging equipment sold in Europe. Declaration requirements of the use of recycled plastics are also in the ECMA 370 Eco Declaration.

In August this year, DIGITALEUROPE, the association presenting the European digital technology industry, published a report which showcases best practices of early adopters using recycled plastics in ICT products. The

idea for this paper emerged from a series of industry workshops and visits to recycling plants. In the future, developing partnerships between recyclers and manufacturers will be key to close the loop.

The report highlights the challenges ahead to policy-makers and aims to inspire other sectors and producers. At present, there are a number of hurdles yet to be overcome for recycled plastics to be more widely used. For any product, material sourcing and selection is one of the most important business decisions. Electronic products contain a large number of parts and materials because of their heterogeneous and diverse applications. Most of the plastic materials used in PCs, for example, are used as housing. Imaging equipment, next to plastic housing, also has many internal plastic parts that play a structural and load bearing role. Therefore, different grades are required depending on the nature and purpose of each part. For plastics used in small, integrated mechanical components the situation is again very different. Plastics used in customer-facing applications, such as product chassis, have to meet particular aesthetic and mechanical requirements, which often limit the possibility to use material from recycled sources.

For ICT products that are subject to complex legal requirements it is critical to ensure that all materials, including recycled plastics, meet multiple requirements. These requirements range from hazardous substance screening, safety and quality assessments, security of supply, economic viability, cosmetics, performance and consumer preference. At the same time, while recyclers have made technical progress in the past few years, it is still not easy to find sufficient supply of high quality post-consumer recycled plastics.

To overcome these constraints, a combination of methods is suggested as a way forward. The most critical element for success is to encourage innovative solution development in the marketplace and to put in place framework agreements that will encourage uptake and ensure scalability of already existing initiatives (e.g. financial incentives or R&D support for recycled plastic projects). Besides this, producers are encouraged to start by identifying products or components that are most suitable for the use of recycled

plastics where barriers are relatively low. Adapting the design of products to the possibilities of recycled material, such as colour and surface, as well as designing with the dismantling and recycling processes in mind, can help to increase the recycled content in products. Also, the continued dialogue with recyclers on the specifications and needs will be crucial. With a combination of economic incentives and technical progress, the ICT industry could make a meaningful progress in the future.

The seven “success stories” featured in the report range from printers, monitors and laptops to printer cartridges. Lenovo, for example, challenged its product teams to incorporate at least some post-consumer content (PCC) into every PC product. They worked with a Lenovo recycled plastic supplier to develop and qualify a new HB-ABS recycled material for use in producing monitor parts. After successfully completing moulding trials and product testing, this material was eventually introduced in the production of Lenovo’s ThinkVision Monitors series. A similar process was adopted for Lenovo ThinkPad notebooks, resulting in recycled plastics used in the LCD cover, base cover, top cover, palm rest and the thermal door. Lexmark has identified opportunities to utilize PCC materials in its products. Now all Lexmark devices, including printers and cartridges, contain PCC content, in certain cases up to 40%. Also at Dell, the product designers are aware of the inherent trade-off when choosing plastics. They use several “design for recycling principles” to plan for recovery and recycling already in the design face.

Overall, the case studies in the paper show that it is feasible to use recycled plastics in a number of ICT products when innovative solutions are explored for particular products or components.

# Circular economy – from building blocks such as better recycling and resource-efficiency to system-wide changes in the entire product chain



**Benedek JÁVOR**

MEP (Greens/EFA), Vice-Chair of the ENVI Committee

The European Commission's Circular Economy Package is an important step to stimulate Europe's transition to a circular economy, to cut resource use, reduce waste and boost recycling. The switch would result in a reduced raw material consumption, which could break current trends in material import dependence, lead to enormous cost savings and increased competitiveness in Europe. Equally importantly, such transition would help preserve natural resources and ecosystems - in and outside the continent.

## Better recycling efficiency, respecting the waste hierarchy

As repeatedly highlighted by the European Commission, the intention of the new package was to change the narrow focus on the end-of life phase and cover the whole product cycle. However, as I – together with many fellow MEPs and partners – see it, the package only tackles part of the challenges. The bulk of the attention was given to revising legislative proposals on waste including the waste framework directive, the landfill directive, the electrical and electronic equipment directive and the waste the packaging and packaging waste directive.

Let me stress that I fully agree with the overall goal, to create a clear policy framework, a stable and credible long-term path for waste management, allowing stakeholders to plan ahead and develop long-term investment

strategies focusing on the upper part of the waste hierarchy. The proposal rightly recognises the importance of waste prevention, sets targets for reduction of waste and proposes measures for reuse and recycling.

Moving up the waste hierarchy, diverting waste from landfills and incineration, harmonization of the calculation methods, increased traceability of hazardous waste, the development of as well as better recycling efficiency of different waste streams are indeed key in creating a circular economy. EU policy has already driven improvements and I truly believe that the new package can trigger further changes in these fields, especially regarding the reliance on primary raw materials. I also welcome the idea to establish an early warning system to anticipate possible non-compliance issues.

Nevertheless, I insist that the scope of the package remained narrow, the incentives for the public and private actors are insufficient and these will hamper any major shift towards a circular economy.

## The production side of the loop and the resource-efficiency dimension

Beyond sustainable waste management there are other factors that should have major role in the transition to a circular economy, such as ecodesign, extended producer responsibility and a well-functioning market for secondary raw materials. It is also high time we eliminate planned obsolescence of products and technological goods and extend the products lifetime.

To fulfil its own promise to cover the whole cycle, the Commission should take an in-depth look on the production side of the loop and come up with a better and strong legislation on product policy covering all product groups, not just the energy-related ones. As a member of the European Parliament I have also called for increasing the products' expected lifetime, the durability, repairability, reusability and recyclability of products, components and materials as well as for a binding resource efficiency target by 2030. I also stress the value of including resource use in product information and eco-labels in order to empower consumers.

Besides, we need to reinforce demand side measures (e.g. public procurement) to enhance uptake of resource and energy-efficient products and products based on secondary raw materials. I also believe that improvements, including setting minimum requirements in extended producer responsibility schemes are of utmost importance.

Eco-innovation and an overall rethinking of production processes with a life-cycle approach could also contribute substantially to reduced resource consumption and the development on non-toxic material cycles, the substitution and phase-out of environmentally harmful, hazardous or scarce resources, e.g. via the broader use of renewable energy sources.

## And beyond – changing the consumption patterns, moving towards sufficiency

I would also like to highlight that the above mentioned efficiency improvements do not necessary lead to the real decoupling of economic growth from environmental pressures. Benefits are often offset by increasing consumption. I am a strong advocate for an absolute reduction in the resource consumption, limiting it to sustainable levels. In other words, I am totally convinced that we need more substantial changes along the entire product chain, including complex lifestyle changes along the sufficiency concept on the one hand and new business models on the other hand.

For such changes in the consumption patterns, consumers need appropriate signals – including the full elimination of environmentally harmful subsidies. The new business models would allow a shift from the current ownership-based system to shared consumption of goods and services with function/service-based models becoming mainstream.

To conclude, circular economy is not just an opportunity, it is a necessity. We need to fully respect the ecosystem boundaries, their resilience and regenerative capacities and in order to arrive to a truly circular economy, we need to go beyond improved waste management and resource efficiency. Sufficiency (limiting our own consumption) and sharing together with eco-innovation, ecodesign, reuse, repair are the key words of our future.

# Marketing will promote the use of raw materials from recycling



**Sébastien PETITHUGUENIN**  
General Manager of Paprec Group

For the past 20 years, mentalities have changed for the better. We are now all aware of the scarcity of raw materials and of the importance of the environment, and there is a strong demand for products that tackle environmental issues. Brand owners have to be more “eco-friendly” - that is to say more responsible when it comes to their means of production.

“Sustainable development” is now a widespread notion that everybody agrees with and that has penetrated all levels of the business economy: finance and accounting, purchasing, factories, sales and marketing, communication... This notion is so persistent that not only can't any company or country go backwards and they all have to take it into account, but more than that the whole economic system as we have known it for decades is now being challenged by a new model: welcome to “Circular Economy”.

How is that circular economic model new? Well it's not, really.

Circular economy is meeting people's demand for a more responsible society; when buying a product, we want to take part to a good and positive action. We already have a more responsible finance that has emerged with “green” hedge funds and “green” financial products such as green bonds. Companies implement everyday more and more local partnerships with associations and are putting

pressure on their suppliers so that they produce more fairly or more ethically. The French government has recently forbid the retail industry to throw away food products before being sure they can't be given away to poor people.

Mentalities are quick to change when it comes to something people desire; tough to change when it comes to something they want to get rid of. The main question we're facing is what about the end-of-life of those products? Indeed, one must admit people don't like waste and garbage: what's the use of it?

Well, the recycling industry aims at producing raw materials from recycling waste! Those raw materials from recycling meets the exact same standards as the raw materials extracted from Mother Earth – except they have already been used in the past and will keep on being used in the future.

That's where I'm calling for a more responsible marketing, that targets both the desire of people for a greener planet and the desire of people to see their waste becoming useful. Raw materials from recycling are the 21st century's raw materials: they are “carbon light” and “job heavy”.

The recycling industry is the buckle of the “circular economy belt”: eco-design of products guarantees an efficient and low-cost end-of-life treatment by recycling; raw materials from recycling offer substitutes to the “old” raw materials that comply with international norms and standards. Producing those high-quality raw materials from recycling is our job at Paprec – and we're good at it as within 23 years we've become the French leading recycling company with 7 million tons recycled every year in our plants.

There is a consumers' demand for the use of raw materials from recycling, at a significant rate of 50% or more. The increase of their use in “traditional” industrial processes will meet people's demand for carbon light products, and for a use of their waste.

And that's what marketing strategies are about: to meet people's demands and needs.

There are too few examples of products that use raw materials from recycling and that

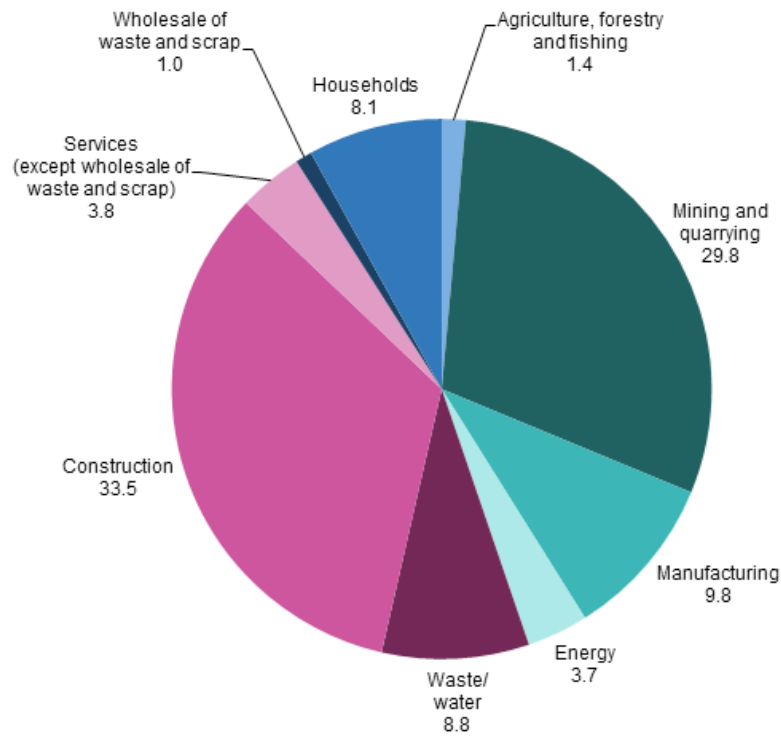
are proud of it. Marketers still too often think that raw materials from recycling are depreciated compared to virgin raw materials – but that's not what people think. Moreover, those positive example (plastics from recycling used in ball-point pens; concrete from recycling or glass from recycling used in new buildings, etc...) are very often initiatives of small start-ups (not of big major companies) – and start-ups are generally forerunners.

Brand owners can promote the use of raw materials from recycling in order to achieve these green and positive goals as well as increasing their benefits altogether. So far, they've only put the stress on the “recyclability” of their goods : they must go one step forward and actually incorporate raw materials from recycling in their processes. The risk does not weigh on the production side as raw materials from recycling are already widespread, but it's the risk of innovation in marketing. Brand owners must take that risk that's actually an outstanding business development opportunity and a once-in-a-lifetime marketing challenge.

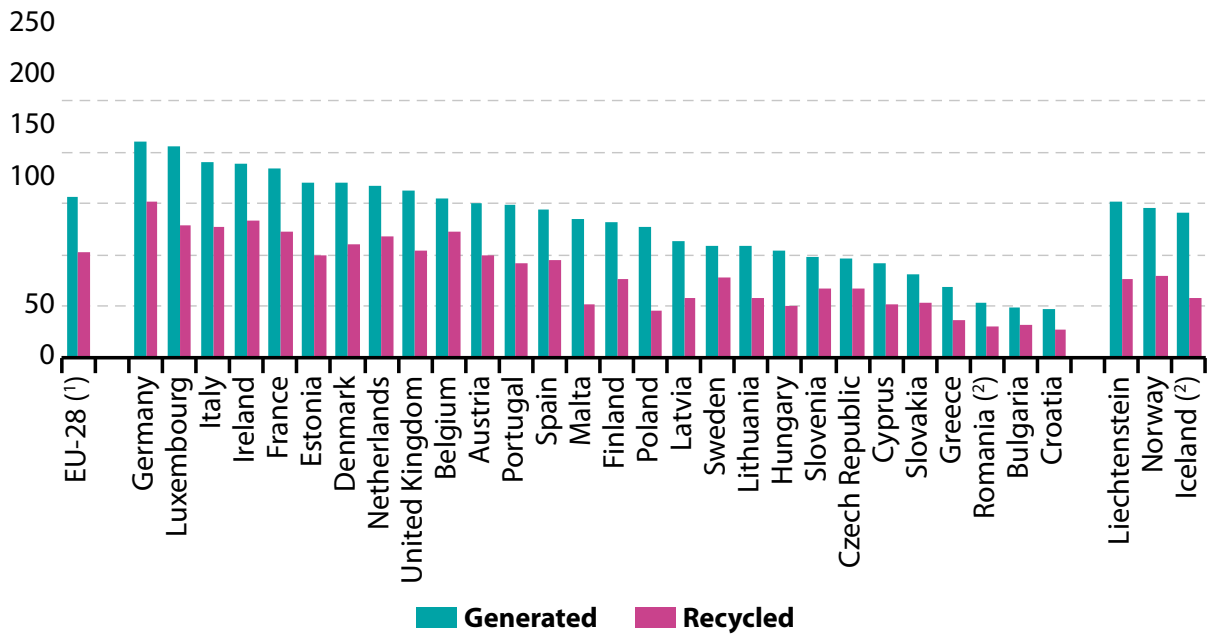
So it's now up to brand owners and politics to promote the use of raw materials from recycling. Politics have to push forward the use of raw materials from recycling through legislation ; brand owners have to use raw materials from recycling as a strategic marketing asset. And the more we will use raw materials from recycling, the cheaper they will become – hence being more and more competitive on a financial aspect as well as on an environmental side. The industrial facilities based on a linear economic model are ready to adapt themselves and seize this opportunity that will allow us to experience a sustainable economic growth that respects the environment.

Stronger marketing and stronger communication on the use of raw materials from recycling will benefit consumers - as products will better meet their demands; brand owners - as they will be greener and carbon light; countries - as every recycled waste can have a positive impact on international trade balance.

**Ready for the revolution of “Recycled inside”?**



Volume of overall packaging waste generated and recycled per capita, 2013 (kg per capita)



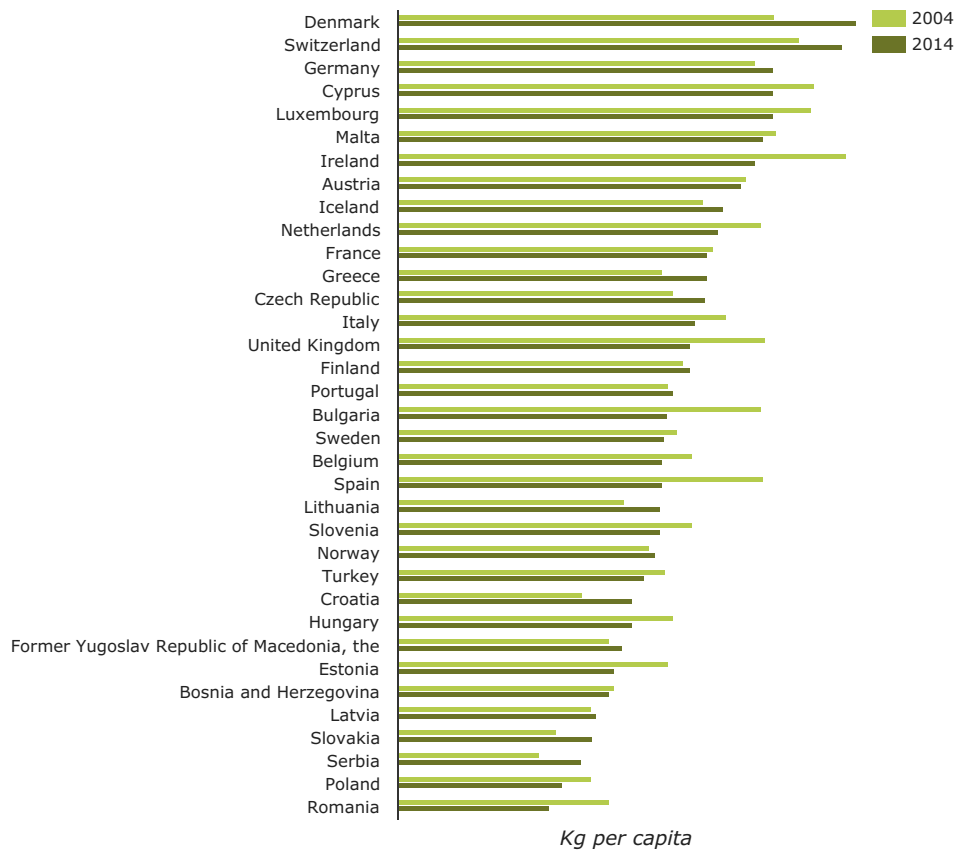
Note: ranked on 'Waste generated'.

(1) Estimate.

(2) 2012 data.

Source: Eurostat (online data code: env\_waspac)

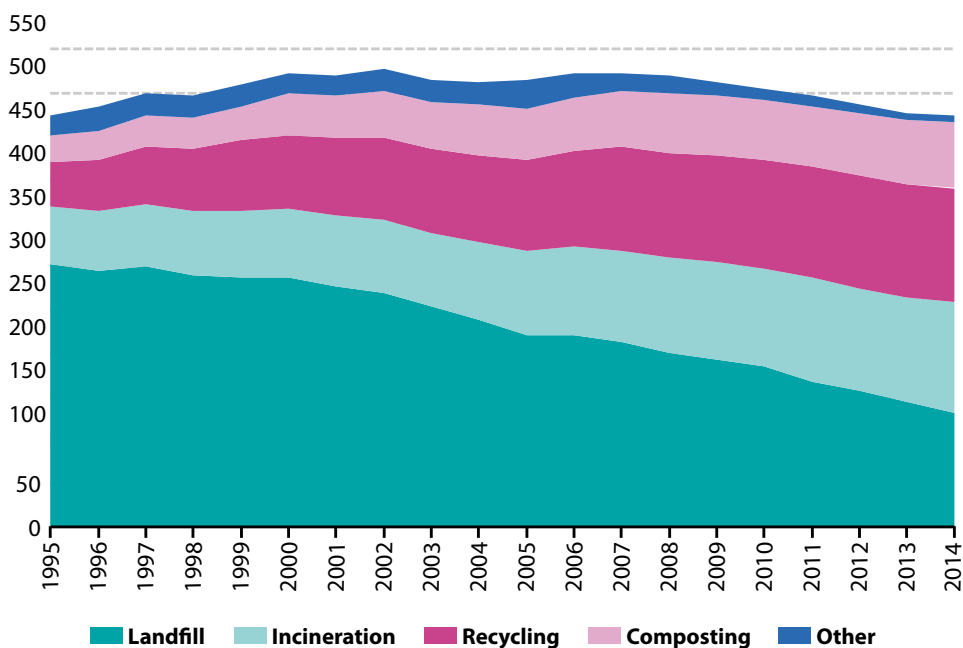
### Municipal waste generated per person in 35 European countries (2004 and 2014)



**Data sources:**  
 a. Eurostat. [Municipality waste statistics](#)  
 b. Eurostat. [Demography national data population Population on 1 January by age and sex](#)  
 c. Czech Ministry of the Environment. [Waste Management Information System](#)  
 d. The Environment Agency of Iceland. [Environment Agency of Iceland](#)

Resource efficiency and waste > Municipal waste > Municipal waste management across European countries

### Municipal waste treatment, EU-27, 1995–2014 (kg per capita)



Source: Eurostat (online data code: env\_wasmun)

# The recycling of all household packaging in France



**Jean HORNAIN**

General Director of Eco-Emballages

At the beginning of the 1990s, facing increasing volumes of waste, Antoine Riboud, then Chairman of Danone, and Jean-Louis Beffa, Chairman of Saint-Gobain, suggested to Brice Lalonde, the French Ecology Minister, an innovative solution to address the challenge of dealing with the household packaging waste: don't create a tax, rather entrust the industry with the responsibility to manage household packaging waste.

Eco-Emballages SA was thus set up in 1992 as a private company acting for the general interest, to assist the industry (major groups, SMEs and small family businesses) with fulfilling its new obligation to manage household packaging waste in accordance with the so-called extended producers' responsibility (EPR) principle.

Compared to an estimated 18% recycling rate achieved in 1993, 67% of the household packaging are recycled today thanks to the effort of all the actors of the packaging value chain, in particular, the 50,000 companies that paid €7 billion since 1993, and the 36,000 local authorities that provide 99.8% of the citizens with a selective collection scheme.

Recycling is not just about recycling. It also triggers other achievements that must be noted:

- Sorting has become the second most-widespread civic action in France after voting;

- 3.2 Mt of recycled packaging (i.e., 67%) results in a 2.1 Mt reduction in GHG-emissions (equivalent to 1M cars not on the road every year);
- 106,000 tons of packaging were avoided between 2007 and 2012.

Yet, recycling of household packaging stagnates at 67% for a few years now, vs a 75%-recycling target to contribute to reaching by 2022.

**In 2014, it was thus decided to launch a Sorting and Recycling Boosting Plan aiming at increasing selective collection in particular in urban areas, and at boosting the recycling rate for plastic packaging from 24% to 56% by 2030. €90 million were paid by the industry on top of their yearly contribution (€671 M in 2015) over 2014-2016.**

This Plan encompasses the following actions:

- 1. Bring schemes, which offer an effective and cost-effective solution<sup>1</sup>, are deployed or densified**, notably in metropolitan cities and cities where selective collection is more difficult to increase (Paris, Nanterre, Saint-Denis, Lyon, Marseille, Bordeaux, Nice, Montpellier, Strasbourg, Nancy, Nîmes, Bastia, Ajaccio, Toulouse, Le Havre, Pau, Saint-Étienne and Clermont-Ferrand).
- 2. In line with the conclusions of the experimentation led with 3.7 million of inhabitants from 2011 to 2014 to extend the sorting instructions to include all plastic packaging, new sorting centres are built and others are modernised** so that their process can identify and allow the capture of the new plastic resins. Treatment capacities also increase.

<sup>1</sup> Eco-Emballages led in October 2015 a study with Deloitte comparing the systems of 13 European cities including Munich, Berlin, London, Edinburgh, Stockholm, Florence and Madrid. It concluded that the most widespread and efficient systems in Europe involve collection by separate streams and bring schemes. Fibrous products (paper and cardboard) are systematically separated and 3 countries (Spain, Germany and Italy) have fully implemented collection schemes with sorting by different materials (glass, paper/cardboard and metal/plastics).

- 3. R&D actions, started in 2011, continue to be led to answer the challenge of the recyclability of plastic packaging.**

For instance, tests were performed on 100% amorphous PET trays and mono-PET seals by Herta, Bel, Elivia and Kermené to replace their PVC and multi-layer PET-based sealed trays that are used in many fresh products segments such as cooked meats, meat and cheeses. As a result, a fully-recyclable packaging will be marketed in 2016. More examples can be consulted in our activity report for 2015.

- 4. Communication campaigns are led by the local authorities to mobilise citizens.**

The local authorities can use a web platform proposing methodology guides, tools and customisable communication ("Trions +"). Door-to-door awareness-raising actions are amplified and professionalised ("Ambassadeurs du Tri", i.e. Recycling Ambassador). Specific programs also target schoolchildren.

- 5. Working sessions are proposed to the local authorities willing to improve their performance, to optimise their costs, and to share best practises.**

In total, 250 projects are developed throughout France, including in overseas territories. By the end of this year, over 15 million of citizens shall be able to sort all their plastic packaging, i.e. about 25% of the national population, whereas since 1993, the selective scheme only accepted plastic bottles.

**All drivers have therefore been put in place to reach an economic, environmental and social optimum, and to go further towards the path of a circular economy in France.**

**This Plan, that inaugurates a new means of cooperation between the industry and the local authorities, marks the dawn of a new recycling era in France.**

It was decided by the industry to increase this momentum by investing further €4 billion over the course of the next accreditation (2017-2022).





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**Yet, prior to this Plan, the industry had already taken many sustainable initiatives:**

- Tonnage fell by approximately 30% between 1997 and 2012 in 8 representative everyday consumers' goods markets (lighter bottles have been developed by the wine industry since 2009; PET bottles became 36% lighter between 1994 and 2012).
- Packaging weight was cut again by 4,500 tons in 2015;
- 40 billion of packaging carried a sorting instruction in 2015, including to inform the consumer when the packaging could not be sorted.

**It is Eco-Emballages' role to assist its clients in their initiatives, through practical guides, on-line tools, R&D projects.**

For instance, Eco-Emballages and Alliance 7, an industry association, joined forces to publish a guide for grocery and specialist nutrition companies. Famous brands like Valrhona, Lindt & Sprüngli, Biscuiterie de l'Abbaye, Mondelez International, Blédina and Ricola shared their experience therein.

Businesses using paper and cardboard packaging can also now consult a guide produced with Revipac, an organisation involved in taking-back and recycling household paper and cardboard packaging.

Adelpe, Eco-Emballages' subsidiary, also provides eco-design support, in particular, to the wine and the pharmaceuticals industries.

Environmental and recyclability assessments can now be performed with just a few clicks thanks to online tools like BEE

("Bilan Environnemental des Emballages", i.e. Packaging Environmental Assessment), and TREE ("Test de la REcyclabilité des Emballages", i.e. Packaging Recyclability Test").

Eco-Emballages also assists companies with their CSR policy. Thanks to a partnership with Nespresso and local authorities, sorting centres are currently testing an equipment for sorting all small aluminium and metal packaging, a significant proportion of which aluminium packaging consists of small and thin items such as closures, foil and laminates which are not yet captured. Currently, 3 million of citizens are concerned; further 8 million are expected to be by 2016.

For more information, please visit our website: [www.ecoemballages.fr](http://www.ecoemballages.fr)



# “Lifting the job potential in repair activities”



**Jo LEINEN**

MEP (S&D, ENVI Subst.), Chair of the ENVI Committee 2009-2012

**M**oving towards a circular economy model will undoubtedly decrease the EU's dependency on raw materials, reduce greenhouse gas emissions while creating new opportunities and business models for companies at the same time. Beside environmental and economic benefits, a similarly positive impact on the job market can be predicted. The European economy is already broadly based on the service sector due to a low occurrence of primary resources and a challenged industrial sector. Generating jobs through the shift to a circular model will imply societal advantages by improving employment opportunities for low-skilled and highly educated workers on the one hand and reduce unemployment costs for the governments on the other hand.

The waste management and recycling industries in the EU represented around 1% of the EU's GDP in 2008 while generating 2 million direct jobs, according to figures by the European Commission. The 2015 study by WRAP even estimated 3.4 million jobs in repair, waste and recycling, rental and leasing activities in Europe. More than one third of these jobs are located in sectors of repair of machinery and equipment, another 400,000 jobs in repair activities of computers and household equipment. Fully implementing existing legislation or continuing with the current path would already entail a decent growth in jobs until 2030 in areas linked to

waste and product treatment. A more substantial transformation in legislation and policy measures will secure and create an even higher number of jobs. Existing employment will be shifted to other areas to some degree, but the potential for genuinely new work is still high. Reports suggest that a factual reduction in unemployment by 250,000 to 520,000 people representing savings of €3 billion in unemployment costs for the member states could be possible.

To effectively lift the potential in this sector, the transition to a circular economy needs to be undertaken in a consequent and coherent way. The current discussions in the European Parliament and the Council need to result in a more ambitious review of European waste law than proposed by the Commission. The provisions finally adopted will directly translate into employment growth in some areas. The job potential could differ by a factor of 5 depending on quality of the regulation and targets of the directives. Significantly expanding the repair and reuse of electronic devices will not just fundamentally reduce electronic waste, but could scale up employment by 10-15%. Increasing the remanufacturing rate substantially might even double the number of jobs compared to current levels. The Commissions' estimates might be more cautious, but still mention a difference between 400,000 new jobs when implementing current legislation and a transition to a resource efficient EU leading to additional 526.000 jobs.

To trigger this potential, the revision of the waste directives need to include incentives to expand the life span of devices as well as clear obligations to increase the reuse and repair rates of products and give preference to these materials and products according to the waste hierarchy, where prevention and preparation for reuse are the key priorities. Repair services and operators should, therefore, receive economic benefits or preference in procurement procedures or national tax advantages like VAT reductions. This should not just apply to white goods or smaller electronic appliances but to other repairable goods like furniture as well. The European Parliament should adopt a position which specifically promotes initiatives that provide refurbish services or sell second hand

goods. Member States should ensure access to spare parts, technical information or relevant software required for maintenance and repair of products and components to independent re-use operators that might otherwise have a disadvantage to the original producer and would be prevented to undertake maintenance and repair services.

Beside this, an expansion of the Ecodesign regulations is needed to trigger change at the design and production phase of a device. Criteria like durability, reparability, the availability of repair information and spare parts should also be integrated in Ecodesign requirements. Planned obsolescence of products should be addressed in the same way as intentional product design that makes it more difficult to repair the device or to recycle precious materials from it. Attaching the battery pack to the rest of the mobile phone is just one negative example. After delaying the Ecodesign work plan 2015-2017 for almost two years the European Commission should set priorities right again and bring forward new product groups to work on, revising existing provisions where necessary and initiate a more substantial reform of the Ecodesign directive which would fulfil the requirement of a comprehensive circular economy.

# Food waste Prevention: in the heart of the circular economy



**Angélique DELAHAYE**

*Delahaye, MEP (EEP, ENVI, AGRI Subst.)*

**T**he EU and Member States are committed to meeting the Sustainable Development Goals (SDG), adopted in September 2015, including a target to “halve per capita food waste at the retail and consumer level by 2030, and reduce food losses along the food production and supply chains, including post-harvest losses”.

As a matter of fact, the fight against food waste can address several issues.

On the one hand, the world population is estimated to reach 8.5 billion people in 2030. So we must produce better and more, but in our fields, which are not extendable, and without diminishing the forests for new crops.

On the other hand, each year, an estimated 88 million tons of food is wasted in the EU, which is around 20 % of food produced (Fusions).

At the same time, one European out of ten cannot afford a nutritional meal more than one day in two. In 2014, 122.3 million people, or 24.4 % of the population in the EU-28 were at risk of poverty or social exclusion (AROP, Eurostat).

It is high time to react and tackle food waste.

The European Parliament has already reacted by publishing, in January 2012, a resolution calling for the implementation of urgent measures to reduce food waste by 50% by 2025. The European Parliament reiterates its call, in a resolution of July 2015, by proposing a binding food waste reduction target of at least 30% by 2025 in manufacturing, retail/

distribution, food service/hospitality sectors and the household sector.

On 28 June 2016 the European Council adopted conclusions to reduce food waste and losses in the future: improve monitoring and data collection to understand the problem better, prevent food waste and losses and enhance the use of biomass in future EU legislation, and facilitate the donation of unsold food products to charities.

But the job is not finished: we need to harmonise our definition of food waste and our regulations. That is why we are right now working in the European Parliament on such a definition in the circular economy package, adopted by the European Commission in December 2015. Furthermore, the Parliament will work on this specific issue through the Initiative report “On resource efficiency: reducing food waste, improving food safety”, which will start in January 2017. This initiative report will be the occasion to propose clear and practical solutions.

Moreover, we have to respect the food waste hierarchy: prevention at first, then edible food rescue, prioritising human over animal feed and, at last, biochemical reprocessing.

Beyond the commitments for member states, it is now time to implement food waste prevention in our everyday life. We should move towards the circular economy adapting consumer behaviour, business models and multi-level governance to bring the value back to food.

Everybody is concerned: from the farmers to the consumers including food industries and retailers. If everybody makes an effort we could drastically cut food waste.

Several member states have already implemented national regulations to enhance food waste management and, in particular, tax reduction as a counterpart of food donations; obligation to donate unsold food for retailers in Belgium and France. But legislative, administrative and practical barriers still refrain food donations<sup>1</sup>. As a matter of fact, food donation can reduce the amount of edible food going to waste and benefit the most deprived.

We should question our relationship with food and we also have to consider food as common goods. It means shifting our way of consuming it. We have lost the value of it whereas it should be as precious as water. It also means that we have to respect the fruit of labour and in so doing regain our respect for food. It needs a cultural revolution. We can do it!

<sup>1</sup> according to Deloitte report in June 2014: “Etude comparative de la législation et des pratiques des États membres de l’UE en matière de dons alimentaires”

**LOVE  
FOOD  
hate waste**

# How to handle hazardous waste in a circular economy?



**Nicolas HUMEZ**  
Chairman of HWE

The Circular Economy Package is a huge opportunity to develop recycling and green growth in the EU. Nevertheless, the focus is only on a small part of the waste streams and on quantitative targets for these streams. HWE estimates that Europe should be more ambitious.

The hazardous waste management sector can contribute “closing the loop” safely thanks to the reinforcement of three quality principles in the Waste Framework Directive:

## 1/ Consecrating “Decontamination” as a prerequisite to safe recycling/recovery

The objective of a circular economy is ultimately to preserve resources (raw material, water and fossil fuels). Yet, industries and the public must trust that a product incorporating recycled materials/substances from waste is as harmless as a product that does not contain recycled materials/substances. Hence, before or during a recycling process, **waste must be decontaminated from their hazardous unwanted fractions** (for example all regulated substances like POPs and other substances of concerns that shall not come back into the loop) **to protect the public, workers and the environment from exposure**. “Decontamination” means an operation removing or treating the unwanted hazardous components or pollutants from waste material,

and when it is not possible for technical or economic reasons, the waste material itself shall be treated in a way that the pollutants are disposed of.

## 2/ Clarifying “Non-Dilution” to prevent dissemination of hazardous components

Mixing and blending are common practices in the area of hazardous waste treatments. Nevertheless, **we need clear provisions in order to distinguish between ‘mixing’ which is a permitted operation and ‘dilution’ which must remain a forbidden operation**.<sup>1</sup> This could be done based on the 2012 “Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste”<sup>2</sup>. HWE suggests taking the opportunity of the current legislative revision to explicitly clarify this distinction. Whatever is the fate of the mixture of different hazardous waste, when there is no aim at chemically transformed the hazardous substances in the mixture, the operator of the mixing operation must ensure that each hazardous waste composing the mixture must, individually, be treated in an environmentally sound manner at the final treatment destination. In other words, you cannot mix hazardous waste considered as toxic (HP6) with other hazardous waste (but nontoxic) with a resulting mixture which will appear nontoxic.

## 3/ Strengthening “Traceability” is paramount to guarantee legal certainty

The third principle of hazardous waste management is essential to ensure its environmentally sound treatment. Here also, legal clarification is required to eliminate a loophole in the traceability scheme. In view of safe recycling high quality materials/substances, we have identified decontamination and non-dilution as two essential principles in order to

close the loop with safe materials/substances free from unwanted hazardous pollutants. But, if the economic operators in the waste management chain until recycling have no precise idea of the type of potential hazardousness of the waste they intend to recycle, circular economy will eventually fail.

This is the reason why we support that **traceability of hazardous waste must be based on the hazardous properties of the waste** in order to ensure that no very toxic waste are hidden among other hazardous or non-hazardous waste and treated in non-appropriate facilities.

*Conclusion: Decontamination, non-dilution and traceability are necessary to provide high quality materials/substances from waste. Separate, extract, destroy and get rid of hazardous contaminants that nobody wants to keep in the loop of recycling and recovery is essential to ensure confidence in circular economy. Several amendments have been already adopted by the ITRE committee in the Parliament on these issues. HWE hopes that its ENVI committee, then its plenary, and the Council will confirm the path to an appropriate inclusion of the “Decontamination, non-Dilution and Traceability” principles in the Waste Framework Directive for a safe implementation of Circular Economy.*

**HAZARDOUS WASTE EUROPE (HWE) represents 152 hazardous waste treatment installations located in 10 EU Member States, operating a wide variety of treatment processes for a total capacity of 4,5 million tons per year**

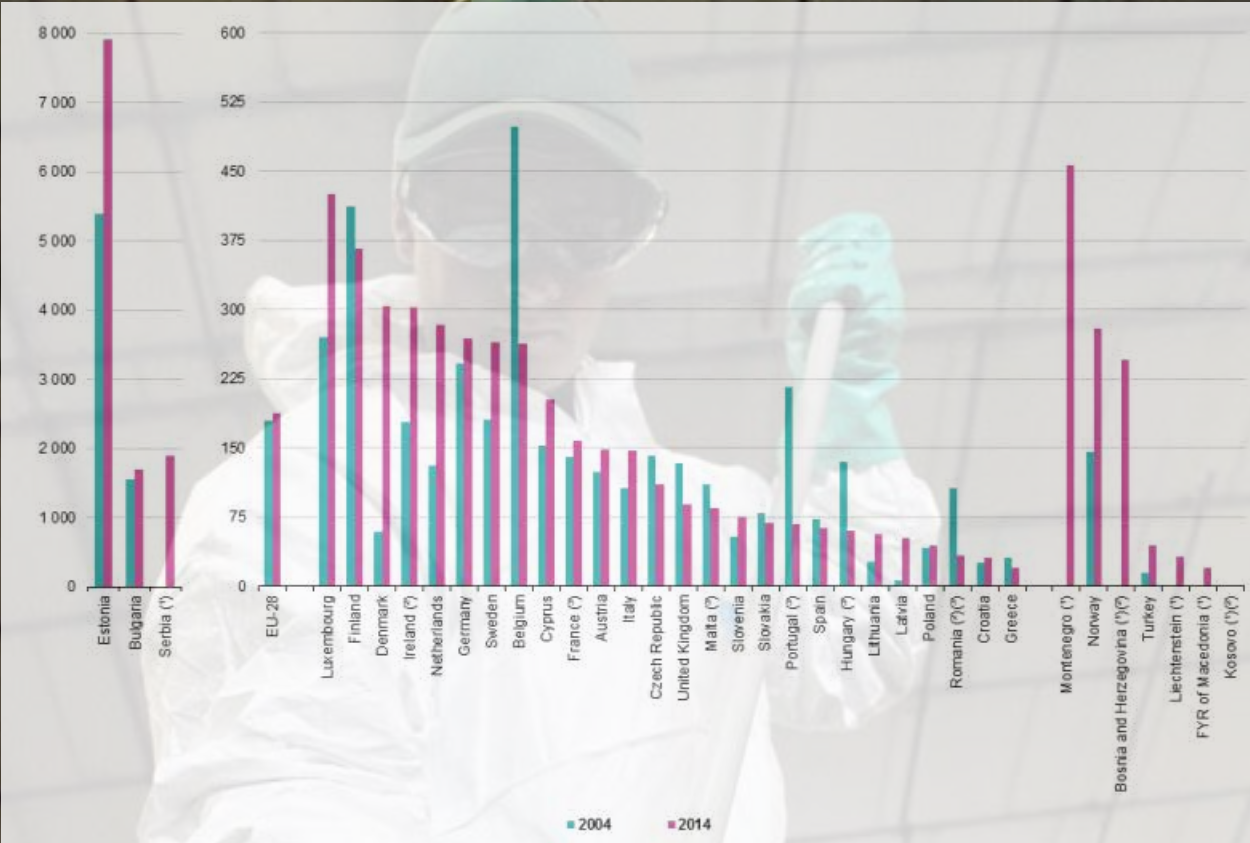
HWE members apply the waste hierarchy whenever applicable to hazardous waste taking into account the best overall environmental outcome.

They are attached to following **ethical rules**:

- No dispersion of waste or residues,
- No dilution of waste and emissions in the environment,
- Keeping traceability throughout the entire waste management chain, and
- Recycling and recovery in the specific field of hazardous waste.

<sup>1</sup> In order to prevent any dissemination of hazardous components in the environment and in materials, the dilution ban on hazardous waste mentioned in article 18 of the current Waste Framework Directive should be clarified. Indeed, as there is no definition of “dilution”, rules are blurred.

<sup>2</sup> [http://ec.europa.eu/environment/waste/framework/pdf/guidance\\_doc.pdf](http://ec.europa.eu/environment/waste/framework/pdf/guidance_doc.pdf)



Note. The two parts of the figure have different scales for the y-axis.  
 (\*) 2004: not available.  
 (\*) 2012 instead of 2014.  
 (\*) 2004: estimate.

[http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Hazardous\\_waste\\_generation,\\_2004\\_and\\_2014\\_\(kg\\_per\\_inhabitant\)\\_YB16.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Hazardous_waste_generation,_2004_and_2014_(kg_per_inhabitant)_YB16.png)



Note. The two parts of the figure have different scales for the y-axis.  
 (\*) 2010: not available.  
 (\*) 2012 instead of 2014.

[http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Hazardous\\_waste\\_generated,\\_2010\\_and\\_2014\\_\(%25\\_share\\_of\\_total\\_waste\)\\_YB16.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Hazardous_waste_generated,_2010_and_2014_(%25_share_of_total_waste)_YB16.png)

# Recycling?

## Time for being ambitious



**Joan MARC SIMON**

*Executive Director, Zero Waste Europe*

In December 2015, the European Commission decided to start a transitioning Europe towards a circular economy. What for long has been championed by environmental NGOs was placed at the heart of European policies: we live in a finite world with finite resources and we need to move from a take-make-waste-dispose model to a circular economy.

A circular economy mimics nature by re-introducing products and materials in the economy through recycling and preparation for reuse and minimizing the material losses that take place through waste-to-energy incineration and landfilling.

In order for that to happen, the recycling or preparation for reuse industries -like any other industry- need to meet four main conditions: supply is constant in quality and quantity, to be economically competitive with alternative waste treatment operations, a demand for their products exists and, last but not least, clear political direction and certainty about the mid-term future of the sector.

Some major challenges arise for such transition to happen. First of all, we have to ensure that waste is collected in clean and separated fractions. If waste is meant to be a new resource, the contamination within different waste streams has to be minimal. In this sense, Zero Waste Europe has been for long pushing

for separate collection of bio-waste and effective separate collection schemes as pre-conditions for any good waste management, with three main principles in mind when rolling out an effective separate collection scheme: compulsory participation, individualization of the responsibility and economic incentives. Having done that, cities and towns in Europe committed towards Zero Waste are reaching separate collection rates above 70, 80 and 90 percent.

Effective separate collection schemes are, thus, key for securing constant and clean supply for recycling and preparation for reuse. That is why, Zero Waste Europe advocates for truly compulsory separate collection within the Waste Framework directive by eliminating the loopholes (TEEPA clauses) and introducing a specific separate collection target for bio-waste.

Secondly, recycling and preparation for reuse should be economically competitive with end-of-pipe treatments, like landfilling or waste-to-energy incineration. This is far from being the case. Very often, landfilling is too cheap, while waste-to-energy tends to be subsidized through renewable energy schemes. A level-playing field is needed between those operations at the top of the hierarchy and those at the bottom. The amendment to Annex VI of the Waste Framework Directive proposed by the ITRE Committee of the Parliament is a good summary of instruments for public institutions to move to the top of the waste hierarchy.

Besides, the on-going revision of the Renewable Energy Directive should tackle the existing incoherence within European waste and climate policies and stop allowing subsidies for waste-to-energy incineration. Because, if priority number one in waste is prevention, why subsidise energy recovery that is only number four in the hierarchy, i.e. second-to-bottom. What if upper levels of the hierarchy were subsidized for preserving energy instead?

In addition to the level-playing field with end-of-pipe waste treatment operations, recycled materials and prepared for reuse products need to be competitive with primary raw materials and first hand products. Reduced

VAT for both secondary raw materials and reuse and repair activities is a good start to make these activities competitive to less circular ones. Moreover, standards for secondary raw materials, particularly for plastics and compost, are key to appease producers about the quality of these materials.

Lastly, certainty about the immediate and mid-term future of the sector is needed to secure the investments and drive effective change in all stakeholders: local and regional governments, recycling companies, waste management operators, producers and citizens. In this sense, targets aren't only a political, environmental and economic objective, but also a clear message to citizens, implementing public authorities, investors and waste managers of the way forward and help aligning actions accordingly. Recycling targets have been one of the main drivers for implementation of separate collections systems at local level in Europe.

However, succeeding in this transition isn't only about making sure recycling happens at a lower cost and that recycled materials are used, but it requires major changes in the way we produce. While the European Commission is still reluctant to open the Ecodesign Directive for non-energy related products, the Waste Framework Directive, and particularly the minimum requirements for EPR schemes, offer an excellent opportunity to drive circular design, by rewarding products thought for the end-of-life and are more easily recyclable or repairable, while penalizing the more linear ones, be it because of their shape, materials, toxic content or any pertinent reason.

Despite the lack of favorable European and national policies, the network of Zero Waste municipalities is proving that reaching 70%, 80% or even 90% recycling and reducing waste generation is possible, while maintaining and even lowering waste management costs. The opinion of the Committee of the Regions on this file also shows that regions, cities and towns across Europe are willing to take up the challenge and lead in this transition. The time for excuses is over, now it's time for the Council and the Parliament to be ambitious.

# Circular economy in Europe

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